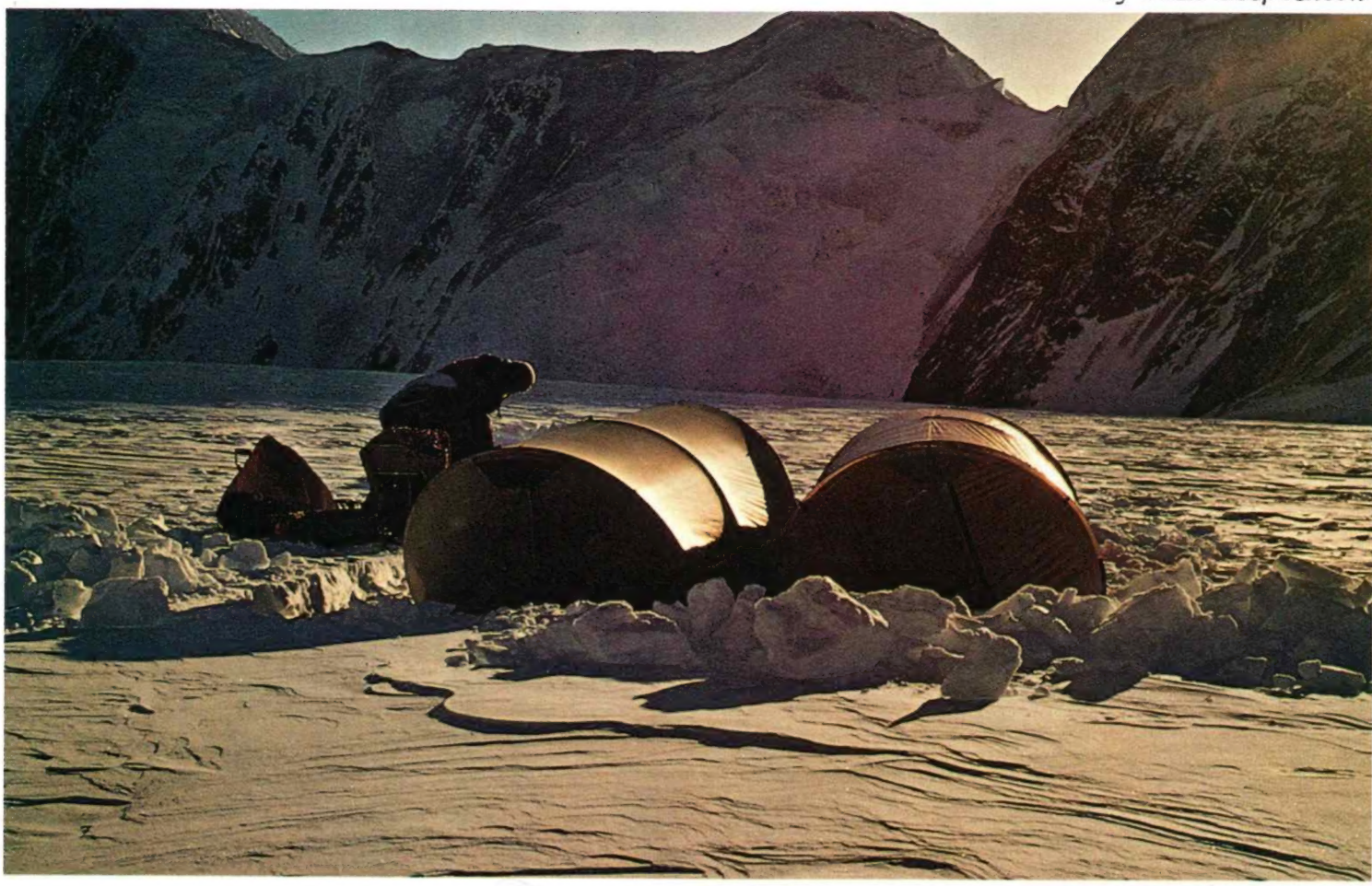
COMFORT IN CAMP

by Jack Stephenson



3R AND 3ERV

henson's is a small family-home operated business. It started as le do-it-yourself project to get better mountaineering gear, and expanded (mostly thru word-of-mouth advertising by customers) full time business spread over 16 different homes, with about ous full and part time workers.

eral people are involved in parts preparation and finishing, but sewing on each item is done by one individual seamstress work- her own home. When she is satisfied it is correct, as good as do, a bit of craftmanship she is proud of, she sews her name n it. She thus gets the satisfaction of doing a complete, quality nd frequently the pleasure of hearing from customers about how e gear she produced has performed), and you, as a customer, assurance that a dedicated, capable individual has done her best uce equipment for you, which you can be proud of owning.

s catalog is considerably different from most. We have found ople really want to understand how and why their equipment how it evolved, and how they can get the most out of it. Such ation published in our previous catalogs often resulted in many uestions, which took many hours of individual letter writing to Since those answers are often equally interesting to others, we to expand this catalog to include the information most of them It is difficult to break up the information under specific sub- ince they all tend to be intertwined. Thus you'll find us often ng, or straying from the main subject, but, hopefully, always ative and helpful. Blank pages are included for you to add your otes, or for us to write in answers to specific questions you may sked which are not covered elsewhere. We intend to keep this asic catalog for many years, with supplimental sheets for new ts, changes, or prices issued as the need arises. If you are inter- n our gear at all, please save this basic catalog. New price and ation sheets will be sent to those on our mailing list, whenever d.

MLITE DEVELOPMENT

henson Warmlite equipment has been developed over many y an aerodynamicist and mechanical engineer, in a successful o improve warmth, comfort, and convenience, while minimizing Although development time has been long due to the require- f extensive personal testing and limited time availability, it has ghly successful. Contributing to this success has been availability ealth of information on heat transfer, aerodynamics, moisture and new materials resulting from tests and studies for space-life t systems. These efforts have resulted in warm ultra lightweight g bags; the first down bags with integral foam bottoms and side zippers; the lightest weight most wind stable tents, *Filmgap,* t major improvement in lightweight insulation since the discov- goose down, improved ponchos, vapor barrier clothing, and a ck with carry system more comfortable than ever before. These ave all been extensively used by individuals and expeditions in lly every mountain range and wilderness area of the world, their usefulness and durability.

HENSONS 1980 CATALOG (or book!)

In 1974 we tried something different: We e a "catalog" that was both a sales log and educational book, intended to be ul for 4 to 6 years with supplements as ed. We then SOLD it for our costs, so uct prices would not have a 15% extra ge to cover costs of "free" catalogs n to non customers. This worked FAR er than ever expected, with only 5 ctions to paying for it in 6 years! We thus going to repeat it. This new log will have current parts of the old uded, but also has completely new ions in this larger, easier to read type, present each product in a simpler way, like other catalogs. We hope this will sfy those who had problems with the lexity of the old one. We have kept all old information, added more, and made it er to find.

We intend to supplement this only as ed, and hopefully NOT every year. Based resent rate at which the government is luing the $ we have stated an automatic e increase of 15% each year. If you don't get a new price list the next year, then either call for new price, or place order with the 15% increase. We will refund any excess if we did not have to increase that much, or will notify you, or send COD if you so authorize, for any shortage.

ORDERING by MAIL or PHONE

You can order anything by mail, including full payment with order. If you want fastest delivery of those items that may be in stock, send a MONEY ORDER or CERTIFIED CHECK with order, and thus avoid the 2 weeks it may take for a personal check to clear the banks. PLEASE keep order as NEAT and concise as practical. No special form needed, but DON'T spread an order out thru a long narrative letter! DON'T send orders by certified mail, special delivery, or telegram, since they all take MUCH LONGER to reach us, if we get them at all! Just use regular mail.

You may TELEPHONE orders for COD delivery by UPS of anything we have IN STOCK, ONLY. COD will ONLY be sent by UNITED PARCEL SERVICE, and they will want payment in CASH, MONEY ORDER, OR CERTIFIED CHECK made out to STEPHENSON. Since we send everything insured, and it MUST be signed for by someone on reciept, COD is no more bother than prepaid shipments, and often much faster.

Be absolutely sure you give us a correct, COMPLETE, and CURRENT address. Extra description of location and a phone number are often helpful. UPS cannot forward items if you move to a different address than you gave us! If that happens you'll end up waiting 3 times as long and paying 3 times the shipping cost.

If you phone to check stock, and then mail an order, don't be surprised if the order takes 8 to 10 weeks, since quite likely an in stock item will be sold before your letter arrives. Many times in the past we have held items for people who said they were sending an order right away, but we never got the order, or, more often, it came in totally different. Being told on phone that we have a 3R blue tent in stock does NOT mean we also have a 3RSDEBlue tent in stock!

* Delivery can take up to 3 months. We do NOT send acknowledgments of orders, unless a self addressed and stamped card or letter is included. Any estimates of delivery time are just that: estimates based on recent PAST production. Since people can vary greatly in their work there is no way we can be sure when something will be done until we see it here, finished! We will do our best to meet all trip deadlines, but don't expect us to compensate for long delays caused by your incomplete order or late change in order.

GUARANTEE

All Stephenson equipment is guaranteed to be, and perform as specified. We will correct any problem found at any time caused by flaws in materials or construction, if you return it to us. Any standard item may be returned within 30 days for exchange, credit, or refund if in new condition. Custom items that are not readily resalable due to unusual sizing or options may not be returned for refund, but may be modified, if possible, to correct ordering errors. If in doubt, ask with your order.

Do not return anything without first writing or calling about it and getting our return approval and instructions. The 30 day limit applies to when you first notify us you'd like to return it, not when we recieve it, altho return must be in reasonable time after approval. Of the few returns we have gotten in the past few years, most were due to a misunderstanding of what they got or how to use it, and after delays of letters and phone calls they asked to have it returned to them as it was, a couple of times missing a major trip. If in doubt, call or write FIRST and save yourself a lot of time and costs. The exception to this would be exchange of a shirt that was too small, for a larger one. (a shirt you think is too large MAY be the right size for you to use).

When you buy our gear, we want you to be happy with that selection, always. There is nothing so disheartening as to discover something you'd rather have the day after you made an expensive purchase. We therefore encourage you to compare all other makes — Be sure you thoroughly understand the real reasons for design features (ie — Is it just a copy of someone else, or does it have functional advantage, or is it simply a cost saving design). One easy way you can compare most well made equipment (But not that which is only sold direct by the manufacturer, such as ours), it to obtain a catalog from Eastern Mountain Sports,
Theirs is one of the most complete catalogs of good equipment available for dealer sales. Altho I feel they have been guilty of quoting misinformation, taken directly from catalogs of their suppliers, I do believe they have tried to be as honest, fair, and informative as they know how, and I can highly recommend them for all the other bits of equipment we do not supply.

Another good source for cheap equipment, altho not a reliable source for good information, is Recreational Equipment Co., in Seattle. Altho some quality equipment is offered, it appears that the basic reason for forming this cooperative company, to get low priced equipment, is still their basic reason for existing, and has an overpowering influence on things they make, or have made just for them.

BROCHURE PICTURES:

Many people have commented on our natural pictures, most saying how pleasing they are, or often noticing how well we have achieved our goal of avoiding sexist advertising while showing how normal and pleasant naturalness can be. A very few think we are trying to use sex appeal to promote our products, but then quite correctly note that instead of that they actually distract attention from the products. The fact is that we wish to promote healthy naturalness, to show our disapproval of the mass of sex reward type advertising, and to make a generally pleasing-to-read brochure. It is true the unusualness of this approach does distract attention from our products (maybe that is why so many write to ask questions already answered in the brochure), but our products can stand the competition. Before you buy ours we want you to fully understand what you are getting; study all other gear available; make careful comparisons on identical basis, so you'll know for sure what you're getting, and will be happy with your choice years later. A bit of distraction in the brochure, which will bring you back to study it some more, can thus be helpful.

We welcome any suggestions for improving the future brochures, or products. We'd especially appreciate getting pictures of owners using our gear, either prints or slides, to use in local display or possibly with your permission, in future brochures, or just to see our gear in use and the people who use it.

Repairs, Returns:

We do guarantee that we will correct any defects or deficiencies in any item purchased from us, to insure that it will perform as advertized. If you do find a problem though, *please* write to us first, giving as precise a description of the problem as you can. We have found that most "problems" are not detects in construction, size, or materials, but are simply lack of understanding of how to use, or adjust something, and a simple letter exchange can quickly correct that. Most other problems are so simple to fix that, given proper materials and instructions you can make the repair in half the time it'd take you to pack it for return, and have the satisfaction of knowing you'd done it right! We do not mind making repairs — they have always been quite quick and simple. But it does bother us to have people upset with us over the long delay, and loss of use of their gear, when all of that delay is due to shipping, which we have no control over, and is totally unnecessary!

On the other side, are people who have problems, but just assume they are "normal", and that no manufacturer would bother answering their complaint. It may be true that many large manufacturers can't be bothered with minor complaints, especially since 90% of them are not their fault. But, you'll never know till you try, and you'll be pleasantly surprised to find most reputable manufacturer are eager to know your complaints, and will do their best to correct them. The reason it quite simple, and logical. If we sell a product which generally performs well, and more sales are based on testimonials from users to prospective buyers, then we want *all* the items we sell to give proper performance to all customers. Thus, if an item has a defect, or the customer doesn't understand proper use of it, then we want to correct that defect or lack of understanding *immediately.*

We answer all questions written to us immediately. The only letters we do not normally answer are actually the ones most deserving a friendly reply; the hundreds of friendly, complimentary letters we get every year commenting on the performance of our equipment under various severe conditions. We really appreciate such letters, which make this whole business most worthwhile, but it would be nearly impossible to answer them all.

Another regularly received type of letter is quickly identified: It is very thick (8 to 20 pages), nearly always starting with "Having thoroughly read your brochure, I have a few questions—", which can be translated to say "Having looked at the pictures, I'd now like you to tell me what the words say", since the rest of the letter simply asks questions which are completely answered in the brochure. We have answered such in the past, but, I'm afraid lack of time will soon force us to simply write *READ THIS* on a brochure and mail it back with his letter! So please, if you feel you must write and ask questions, first carefully read the brochure a second or third time, to find those answers. You'll be spared from the stinging humor I save up just for people who can't, or won't read!

Have you noticed how often junk merchandise is advertised with such terms as "15 days free trial", or "100% money back guarantee", to entice you to buy? These offers are made to convince you the goods are excellent, as advertised, so you'll order them. But, hasn't it also occured to you that *if* the goods *are* exactly as advertised, then there is no need to offer a return or refund privilege, since the customer will know exactly what he is buying when he orders. Those retailers have discovered that most people will not bother to return anything, no matter how defective, so, they entice people to buy with glowing advertisements and "100% refund" claims. The few who return items simply get their money back with no questions asked. That model is soon discontinued, for a "new, improved" one, before enough are sold for the word to spread about its defects. Now, how does that affect us? For years we offered 100% money back, if not satisfied, which was kind of a meaningless offer, since no one ever returned anything. But then, we started to get a few strange returns: a guy would order a tent, be in a real panic to get it for a long trip, so we'd send it several weeks early. Three months later we'd get the tent back, obviously used, asking for his money back "because it leaked in one seam", with some comment he'd only used it once or twice. Another would get a sleeping bag, have it for a summer, then return it for his money back, claiming it failed to keep him warm at some ridiculous temperature like 45° F. (While we have hundreds of claims from customers of being warm at —10° F. to —60° F. for that model). Another would order a sleeping bag, with unusual color combination, and a girth and height combination never before or since sold, then immediately return it for refund, saying thanks, but he was just looking, and really didn't need a bag. All of these were absolutely ridiculous.

We will not give out names or addresses of other customers, unless they have specially asked us to do so. So please do not ask for such information in order to see our gear and get their opinion on it. I'm sure you wouldn't want strangers calling on you to ask you how such and such piece of gear works. We feel we have a far greater obligation to protect the good person who has already purchased our equipment, than to make it easier for the undecided person who is essentially saying "I don't believe you, so lead me to someone more believable". — We understand how all the grossly false advertizing tend to make a skeptic out of everyone. That is why we present complete technical descriptions and explanations for our gear, so you can clearly and completely evaluate it, without relying on our say so. The few testimonials we've copied here, out of hundreds we've received, are also intended to give you a sample of what customers have said after using our gear, in case you cannot understand the technical data we've presented.

NG

ay use the enclosed order blank, or any plain sheet of paper
ur order. Please give *complete* information on each item
ncluding color choices both for the item and for the carrying
is a tent or sleeping bag. For sleeping bags, double check the
height measurements. If you are ordering extra length, be
ate your reasons, so there will not be a long delay while we
ind out if it is in error, or intentional.

p us spot doubtful dimensions, include your height and weight.
feel you must include a letter of explanation of why you're
hat, and the various trade offs you made in arriving at your
ns, plus any other questions, fine. But, *please list* your actual
mpletely, on a separate sheet. (I'll guarantee you that if you
a paragraph saying blue is your favorite color, but then go
ng explanation of why you want a yellow tent, but don't
list it as such, you'll end up with a blue tent!).
nber, tent and bag carrying sacks come in many colors. You
t the bag, or tent color you want, and still have it match
(almost) by specifying sack color differently.
ot order something from a previous catalog, if it is not in-
current one, without first inquiring about availability and

have particular trip dates you'd like equipment for, *please*
. We are likely to get far behind on production, particularly
ze or special option items, but will do our best to make deliv-
most important trips, as fairly as possible. I'm sure you can
e the problems we'd have if you ordered, stating simply
July 10", while someone else ordered the next day stating
on 2 month Alaskan expedition July 10", and we found we
liver one by July 10 and the other by July 11. But, if you'd
ould like in time for July 13 weekend outing and 2 week
starting July 27," the choice would be clear, and everyone
happy. If you feel time may be short, please list acceptable
equipment choices. We will only send 2nd or 3rd choices
mpossible for us to deliver your first choice by your specified
unless you instruct otherwise.
note: This is a *mail* order business. We do accept any
telephone. You may call us, if it is essential, to get ordering
ion, between the hours of 9 a.m. to 8 p.m. EST time (*Please*
r the time shift from other areas), at 603 293 7016 This is a
family phone, and we do not maintain regular working hours,
room, or secretary to answer the phone. On the average you'll
ut a 80% chance of catching someone who can answer your
. Please state what you want and if a return call is necessary,
ne, phone number, type of information you need, and hours to
ll. We will return calls collect only.
ot send orders, or money, by telegram. The average first class
es 3 to 4 days, air mail 2 days, telegram 5 to 8 days. The tele-
ay come to the local office in one day, but then they put it in
lar local mail, apparently taking another day or two to get in
and several days for delivery. Your address *is not* included in
ram unless it is part of the message. We have received telegram
which we had to just wait on until the sender got impatient
o write, or telephone, so we could find out where to ship!
e include a full, *descriptive* street address, not a post office box
so we can ship by United Parcel (faster and safer). If no one
lly home during the day, give alternate shipping address to a
ho is home, or include your telephone number so United Parcel
e delivery arrangements. If no one is home during the day, and
fer to pick it up at the post office, please clearly state "post
elivery only". If you must move after placing an order, but
ceiving it, *please notify us.*

e order well in advance of your needs, and preferably during
er winter months. In the past the flood of orders during spring
mer resulted in delivery delay of from 2 to 10 weeks. If you
urgent due date, please state it with reasons for it. We will
ift deliveries to suit, but normally must insist on delivering in
ence orders are received. Personal checks are acceptable but
normally delay to allow it to clear the bank. If you want to
stest delivery, send cashiers check or money order.
tems sold are guaranteed to be as specified. If you have any
or find any defects we will correct them at any time. If after
an item you decide you'd really like a different model, size,
., you may return it with any price difference and return
for the exchange.
UNTS: Our prices are essentially the same as we would have
we sold to dealers. We get frequent requests for discounts,
because they belong to some special group, or are planning
ecial trip they can't really afford. To us, people are all the
matter what their group affiliation or trip plans, and thus the
the same to all. Our products are good enough to be recom-
by users because they work, not because their testimony was
ed by a discount. We do not have to give our gear away to
ed on rugged trips or expeditions just to claim we're "expedi-
fitters."

We have very limited production capability and thus have elected to make only items which are so clearly superior to any others available that we will be filling a unique need, not merely competing with others with the same products. In order to keep prices reasonable without limiting quality of materials used or workmanship, we have to sell direct only, since any dealer markup has to be added to our price.

NO SWEAT SHIRT — A cure for the breathability myth:

People tend to be quite irrational, seeking the simple, obvious, first things that come to mind, as solutions to their problems. The breathability myth is one of those universally accepted, "obvious", but completely wrong solutions to common problems. People observed that the insulation in their sleeping bags, and clothes, got wet even when not exposed to an outside source of water. It was correctly noted that the way to allow this water to dry out was to use porus fabric on the outer surface. It was also correctly observed that the water came from the occupant. Unfortunately though, the perpetrators of the breathability myth did not understand *how* or *why* that water got from the occupant to the insulation. Instead of trying the obvious thing of putting a water proof barrier between the water source (the occupant) and the insulation, as they had done for years on the other side (ie — rain coats to keep out rain), they made the completely unwarranted and false assumption that a person's skin continually leaks water, which must be rapidly evaporated to keep one dry and warm! These people knew they were cold when wet, but never learned the most elementary facts of physics, so didn't know that it was the *evaporation* of water that made them cold, not simply being wet. Thus, they did all they could to insure rapid evaporation of any water from their skin, and rapid transfer of that water vapor out into their insulation, where it would condense, soak their insulation, and thus "justify" the need for porus fabric to dry it out!

Back in the 1950's I found that wrapping up in a poncho inside my sleeping bag made me much warmer. I had read about this in an old camping book (published in the 30's, I believe). To me, an engineer, the reason why it worked was rather obvious. It was nothing more than a small scale application of the standard way to insulate and heat homes in cold climates: you put a vapor barrier over the inside of your insulation, so inside humidity cannot get out to the cold side of the insulation where it could condense (on wood sided homes that condensation would soak the wood, and later the sun would evaporate the water and steam the paint right off the wood!). You then put a humidifier in the home, along with the heater, to raise humidity to a more comfortable level, which would stop evaporative chilling of your skin, so you could be comfortable at much lower temperatures. (In the 1900 radiators in our old house, the humidifiers were simply long skinny water trays which slipped into the center openings of the radiators). Applied to a sleeping bag, the poncho was the vapor barrier (now we use specially coated fabric in the bag), and the occupant is the heater-humidifier. This worked so well that I decided to build it into my sleeping bag, altho it was many years before I found an acceptable vapor barrier fabric to use.

My next most common problem was cold feet and hands, and wet boots. Obviously the problem was the same — evaporation from feet would chill feet, humidity would then condense on cold boot, allowing more evaporation and chilling of feet. Insensible sweating would continue to provide moisture till condensed water on boots would soak socks and wick back to feet. Initially I found that saran wrap around feet (or over very thin nylon socks — plastic directly on feet feels funny) would solve the problem, keeping feet warm and dry. Saran wrap is the very best vapor barrier, but it is a bit stiff and awkward, thus when polyethylene baggies were introduced (about 1960??) we switched to them. Just slip your foot in a baggie, fold over excess, and put a thick sock over it. Hands seemed to be a more difficult problem, but now, a wide variety of gloves are available, for kitchen wear or chemical use, made out of polyethylene, rubber, or vinyls. Since your hands are kept very moist, to keep the skin flexible, the effect of such vapor insulation is most noticable on them.

When we finally got a suitable vapor barrier fabric for use in the sleeping bag, I decided to also try it in clothing. As with most ideas, it took years (and a couple of extremely cold skiing days) to get around to it. The shirt was made in 1969, and ski pants shortly after. The results were quite dramatic. It replaced the thermal knit long jons, Norwegian net underwear and two bulky knit sweaters, which had been standard ski wear under my parka, and I was warmer than ever before. The most amazing part though, was I no longer got soaked with sweat, and did not have to change or wash out all my ski clothes after each day of skiing! The vapor barrier was doing its job of blocking unwanted evaporation and cooling, but was also acting as an instant sensible sweat detector. As soon as I got slightly overheated, and started to sweat, I'd feel wet, so would open my jacket and cool off. Previously, I would ski a whole run, get overheated and soak all clothes with sweat, but wouldn't notice it till sick from overheat. Then I'd get in the chair lift and freeze from evaporating sweat! Frequent stops were required to warm up and quench a terrible thirst (the bota was generally empty in a half day or less!). With the vapor barrier clothing I stayed warm, dry, and not thirsty, often still having half a bota of wine left at the end of a day (this is the one problem with vapor barrier clothing — you have to remember to drink your wine (or only half fill your bota), or risk seriously damaging your wine drinking reputation!)

In 1973 we finally managed to get some of the vapor barrier shirts produced, by a local company which makes sport shirts, and started selling them with the descriptive title "No Sweat Shirt". Due to doubts about getting them made, kits were also produced. Kit instructions were simply standard shirt pattern instructions, which many people find difficult to follow. The cost of cutting and packaging kits was far higher than expected. Thus, if kits were continued the price would rise and the advantage of making it yourself would disappear. Basically, all this says is what we've always known: A person who is very experienced and familiar with making an item, working with a high speed production sewing machine, can sew up an item far cheaper than a person making it for the first time, trying to follow written instructions, using a slow home machine. Thus the kit was discontinued.

The first No Sweat Shirts were made much like a dress shirt, only reversible, with velcro tabs instead of buttons. Notice though, that some of the features of a dress shirt are not needed, nor desirable (such as cuffs, double yokes, pointed collar, hemmed lower edge), and being reversible is not needed. The vapor barrier coating was aluminized, to reduce emissivity or get reflectivity of radiant heat. The reflectivity was initially utilized by wearing the aluminum side facing in. That does work somewhat (an aluminized surface, faced in, is warmer than a non aluminized surface), but, since the shirt is practically opaque to radiant heat, and is almost at skin temperature, *it* becomes the primary radiant heat loss surface. Thus, facing the aluminum out, to get low emissivity keeps you slightly warmer. The difference is very slight, but enough to rule out the need to ever wear the shirt with aluminum side in. You'll also find the fabric side is far more comfortable against you than the coated aluminum side.

The No Sweat Shirt can also be used as a light wind breaker shirt. The aluminum surface will reflect sun yet reduce radiant heat loss, so you will not get overheated from the sun or chilled in the shade. To make it more useful as a wind breaker we replaced the velco tab front closure with a light nylon coil zipper, and the dress shirt cuffs with closed cuffs. Since coated fabric will not ravel, the bottom hem was eliminated to get rid of that uncomfortable bump when tucked into pants.

It is frequently suggested that the No Sweat Shirt could also be used as a rain jacket. This is true, but that is one of those contradictatory multiple uses: When wearing a rain jacket it is most desirable to wear the No Sweat Shirt as an inside vapor barrier, and thus prevent condensation on the inside of the rain jacket. Obviously you can't wear it both places at once, so take a separate rain jacket (or, poncho, which is better for most backpacking). If you do get surprised by a rain storm, you have your No Sweat Shirt, and no rain jacket, then you'll probably be better off wearing it as a rain jacket (altho the seams will leak, unless you've sealed them).

What about vapor barrier pants? They work great to keep your legs warm, but, since your legs will produce a lot of excess heat when active, you must have means for ventilating them. This is quite simple in my ski pants, where the vapor barrier liner is built into the pants, and a single 2 way zipper on each leg provides instant ventilation control. If you wear vapor barrier inner pants under regular pants, you have to add a side zipper to your outer pants, for access to liner zippers. We are not yet in a position to produce vapor barrier inner pants, or complete pants with liners built in. You can buy the aluminized vapor barrier fabric, which you can use to line your present pants, or make liners.

A few have complained that the shirt will not cool them when overheated! . . . Neither will your down parka cool you. Both are sold to keep you warm; the down parka to stop convective heat loss, the no-sweat shirt to stop evaporative heat loss and **insensible** sweat loss.

Sleeves on some are being made 4" longer than normal to cover hands when used as wind or rain jacket and to give more arm freedom without pulling sleeve up arm, with cuff held at wrist with velcro closure. This also lets standard shirts fit people with longer arms without special fitting (which we have discontinued doing).

Sizes: We are making shirts in 4 basic sizes, listed below:

You can comfortably wear a shirt which is too large, but not one which is too small. Thus, select the size which is as large, or larger than you need on each dimension. These sizes correspond very well with the common sizes of small, medium, larger, and extra large. If you are much smaller, simply buy a small size and tuck out the excess. If you are too large for extra large, please give full dimensions (or just send us a shirt that fits — we'll return it), include $4 extra for custom cutting and handling, and expect to wait a few extra weeks.

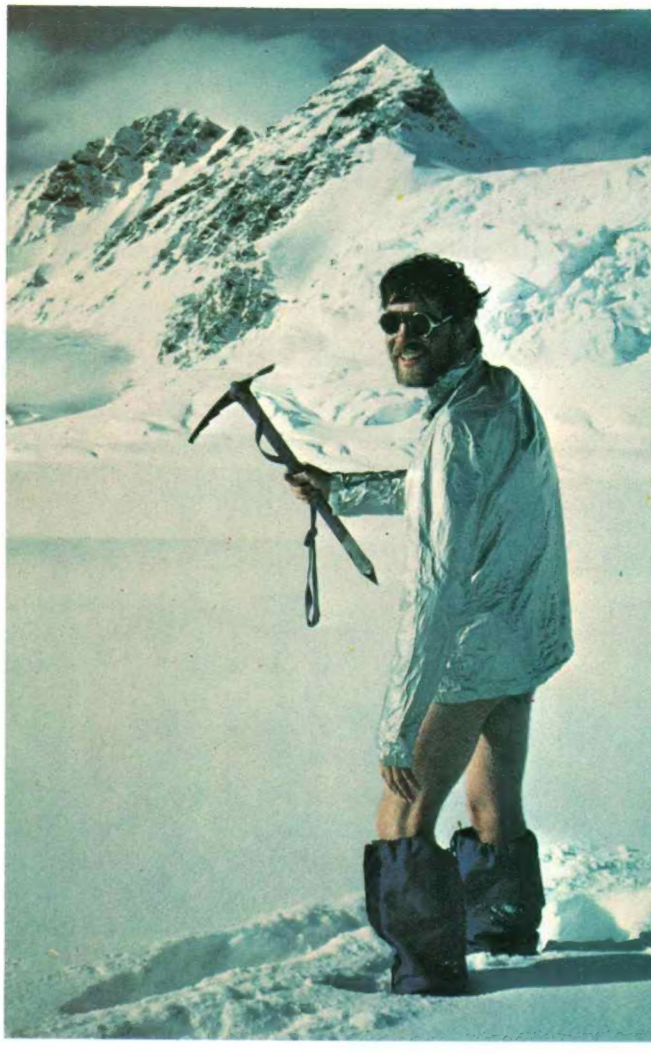
No Sweat Shirt Prices:

Chest	Neck	Arm
34	14½	33
39	15½	34
44	16½	35
49	18	36

1980 PRICES

Small	$26.00
Medium	27.00
Large	28.00
X Large	29.00

" can't tell you how much I think of this VB shirt - have worn it every day at work all thru the winter. It's really funny to see the expressions on others faces as they stand bundled up wondering how I keep warm in just a flimsy army shirt. Little do they know



Nothing Is Better Than a Stephenson No-Sweat Shi

OR BARRIER SHIRTS

The STEPHENSON NO SWEAT shirt is a 5 oz. der that stops evaporative heat loss, thus pping insensible sweating, water loss, and ps your torso about 20 deg. warmer. Then, n you get too warm and start to sweat from rheat, it switches roles, acting as an tant sweat detector so you can immediatly ust insulation to suit, and it prevents sweat from getting into your clothes, so y stay dry and clean! No need to change er shirt everyday because of sweat odors, ce the NO SWEAT shirt eliminates all sweat thus odors, on outer shirt. In fact, thru e yet unknown process, sweat odors are h less on you and the NO SWEAT shirt than mally occur with porus shirts.

Most people wear the NO SWEAT shirt with hing under it for most effectiveness and ckest sweat detection and dry out. Some fer to wear a thin T shirt or the new ypropolene undershirt under it for a ter feel. I have done both and find the ershirt is comfortable if my activity el is not changing a lot, but, if I get y active, the delay in noticing sweat, and s delay in removing excess clothing, ses an uncomfortably long drying time. ce preventing dehydration is most ortant for keeping good circulation to y warm, when you get overheated you should ove OUTER insulation first. Don't vent or ove the NO SWEAT shirt until it is the t thing you have on!

Several people have asked about underarm pers that we started with on our vapor rier shirts, then discontinued, We found t venting under your arm was ineffective less you walk arround holding your arms , and counter to the whole idea of TROLLING temperature & minimizing water s. When overheated you should REMOVE ess clothing or ventilate thru it, not ert to evaporative cooling, so you don't e water and salts thru sweating. Venting pers in OUTER clothes can be helpful IF in the right places, such as down the E below armpit. Zipping open under the arm 't cool an overheated torso, but will ll your arms and hands. You FEEL sweat er your arms first because of tight tact between arm & side, but that doesn't n the overheat occurs there. Venting UP l a parka is most effective (chimney ect), and has the added advantage of ming your neck and face.

There are several nice vapor barriers you use on your feet. We sell polyethylene ks which are convenient, cheap, and will t for several days of use. Various stic wraps or baggies can be used quite l. But, probably the best source is BREAD BAGS! They are durable, big enough, and most people have a regular free supply. If for some reason you don't buy bread in bags, then have a neighbor save them for you.

Use vapor barriers two ways on your feet: For warmth and comfort in cold weather, put a thin stretch sock on first, then the plastic barrier layer, then your padding, insulation layer. (caution, never put thicker socks than will fit comfortably and loose. Extra socks can't increase insulation, but will cut off circulation, thus making feet colder). If you boots are not waterproof and you may get them wet, then put another plastic layer over your padding socks. But, it is better to seal your boots well with wax, Sno Seal, or other good protective coating. You'll hear a lot of nonsense about breathability of leather, but ANY kind of waterproofing seals all porosity, and you don't want any porosity any way!

In warm weather don't wear the inner vapor barrier. But, to keep your boots dry, put a plastic bag over the outside of your padding socks, which should be highly absorbent material such as wool or cotton. Avoid the acryllics, olefins, polyesters, or any other non absorbent socks in summer. Save them for your winter use.

Vapor barriers for hands are readily available. We sell plastic gloves very cheap, which will last for several days use. You can buy all sorts of plastic or rubber gloves in grocery or drug stores. You can get partial protection by simply using moisturizing creams for dry skin on your hands (or any other part of your body, such as your face)

HEAT, HUMIDITY, ENERGY, WATER

Water exists in 3 familiar states: solid (ice, snow, frost), liquid (water, the WET state), and gas (humidity, steam, vapor). Although most people are familiar with these forms, few are aware of the drastic differences between them, especially the very large differences in energy states. This leads people to mix up the relative characteristics, thus arriving at wrong, reversed conclusions.

You are all probably aware of the large amount of heat energy it takes to heat water, more than any other material, (except hydrogen or helium). The basic units of heat are based on energy needed to increase water temperature ONE deg. British Thermal Units (BTU) are commonly used in engineering, and I'll stick to them to avoid confusion. One BTU is required to raise the temp. of ONE pound of water ONE deg. F.. Water VAPOR takes about half a BTU, and air about 1/4 BTU for one DEG.F. temp. rise. To melt ice or snow it takes 140 BTU/lb., or as much heat as

it takes to raise the temp of liquid water 140 deg./lb., or the heat it takes to heat one lb of air 583 deg. F.! (A typical sleeping bag has 3/4lb. of air in the interior an Down compartments. Raising that air from and outside 0 deg to 70 deg takes 12.6 BTU, or the same heat it takes to melt .09 lb (1.44 oz) of ice or snow.

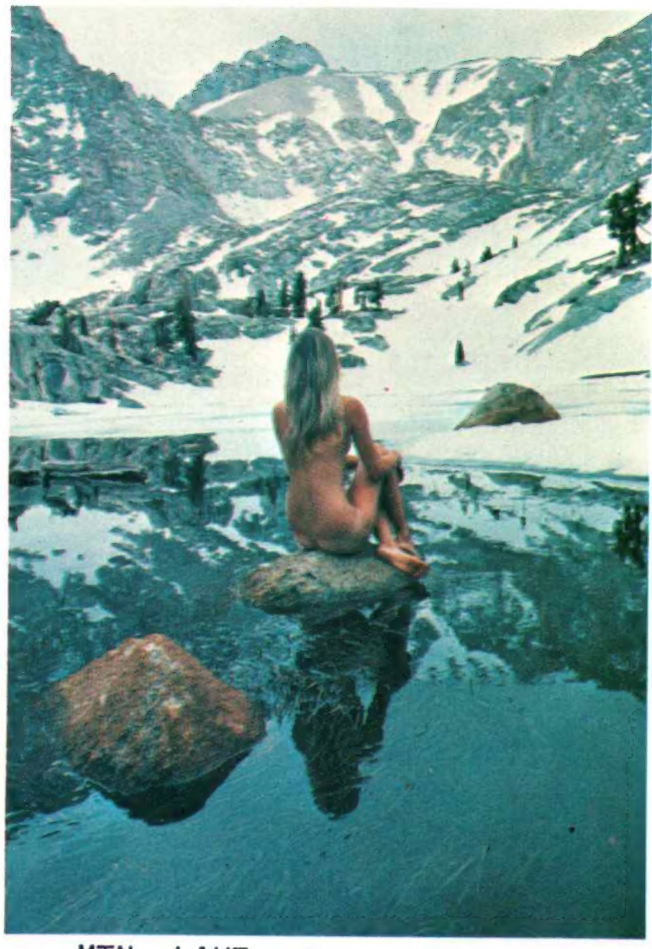
Evaporation of water at typical skin conditions requires 1080 BTU/lb, or 7.7 times as much heat as it takes to melt ice, and 4481 times the heat to raise air temp 1 deg./lb. From this you can see that humidity, or water VAPOR is VERY energetic, hot stuff. It already HAS a lot of heat energy, so won't take more from you. But liquid water has relatively LOW energy, so it can steal a lot of heat from you if you let it escape.

Most sleeping bag manufacturers will tell you that in their porus interior bags you will typically lose 4 lbs. of water by evaporation every night. THINK of what that means in unnecessary heat loss: you would lose 4320 BTUs, or the heat it would take to melt 30 lbs. of ice, or the heat it takes to make 87 cups of coffee! And worst, that water then condenses just inside the outer layer of the bag, decreasing the insulation, when you actually need MORE insulation to make up for that high evaporative loss.

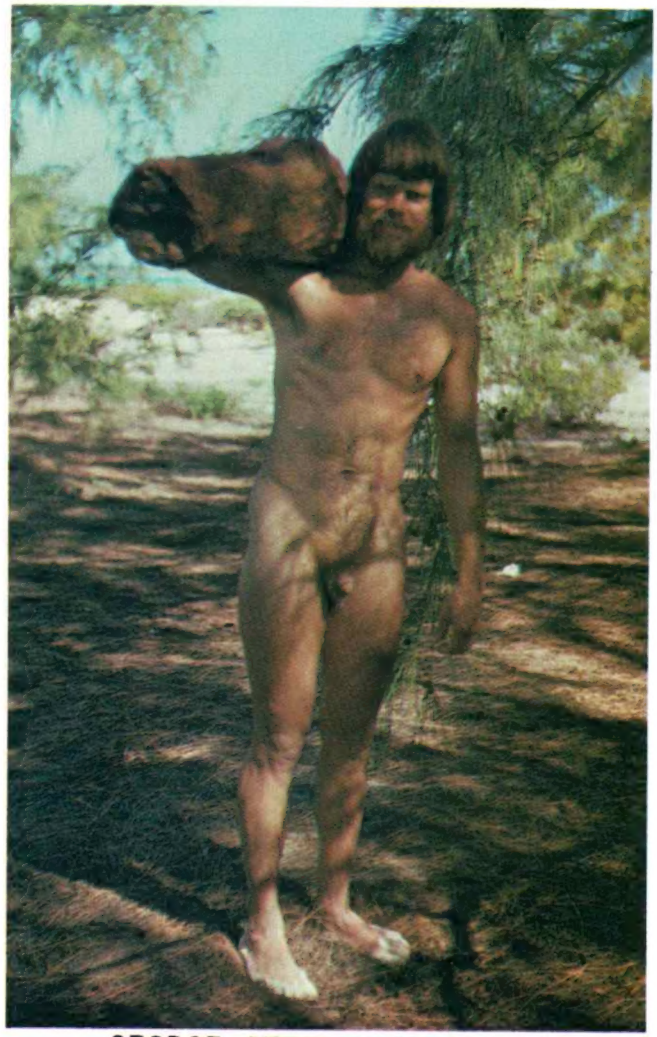
Heating and airconditioning engineers have known the above for many years. To cool you they use dehumidifiers (condensers) so moisture can evaporate from your skin. To warm you they use humidifiers and vapor barriers in walls to block escape of humidity, so less evaporation occurs on your skin. If you must wear clothing for work protection or 'modesty' in summer, you wear porus, 'breathable' clothes to promote the maximum evaporative cooling. Then obviously, when you wear clothes to keep warm, you start with a vapor barrier layer to prevent chilling evaporation. Yet somehow we are told repeatedly that the same porous, 'breathability' we use to chill us in summer is a desireable & necessary feature of winter clothes and sleeping bags!

VAPOR BARRIER Insulation: We are very pleased to see more people making use of vapor barrier insulation. Most knowledgable mountaineers are using baggies on feet, plastic glove liners, vapor barrier underclothes (No Sweat Shirts) and sleeping bag interiors. We've seen several copies of our No Sweat Shirts Camp 7 is producing a very nice all down bag with vapor barrier interior, which should be considered if for some reason you want a warm bag without the built in pad or air mat of ours. Hopefully everyone will soon know and apply vapor barrier insulation for all cold weather applications, and frostbite and hypothermia will become a thing of the past. If you wish to upgrade an existing bag with vapor barrier interior, send for 4 yds. of fabric and sew into your bag,

"on our winter trip into the white mtns the only warm bag was my WARMLITE. The other 6 all had condensation problems, losing loft & insulation-"



MTN. LAKE Myron Rosenberg



WARMLITE TRIPLE BAG

THE ONLY COMPLETE SLEEPING SYSTEM

UNIQUE, EXCLUSIVE FEATURES

TOTAL INSULATION

CONDUCTIVE: "Warmfluff", the highest loft insulation.
RADIANT: Silvered, reflective, low emissivity fabrics.
EVAPORATIVE: Vapor barrier polysoft interiors.
CONVECTIVE: Wind tight fabric, full head and shoulder seal
Unique DOWN FILLED AIR MAT built in.

. TOTAL ADJUSTABILITY

FIVE TOPS available for up to nine levels of insulation,
from +100 degrees to -90 degrees Fahrenheit.
EXCLUSIVE CONTROLLED HUMIDITY SYSTEM; gives 20 degree range extension with each top.
INDEPENDENT zippers, foot and side.
FULLY ADJUSTABLE "Warmfluff" COLLAR for shoulder seal.
INDEPENDENTLY ADJUSTABLE HOOD, sleep in ANY position.

. TOTAL SYSTEM

INTEGRAL AIRMAT, Warmfluff insulated, no heat loss.
FAST acting WEIGHTLESS inflation system.
WATERPROOF COVERS; it can even FLOAT!!
PAIRS with other Warmlite bags on EITHER side.

. TOTAL VERSATALITY

SLEEPING system for ALL climate conditions.
LOUNGING mat.
FLOAT for crossing rivers, or for fishing.
QUILT for bed; zipped together tops.
INDIVIDUALLY constructed to any size, color choice.

. TOTALLY SUPERIOR CONSTRUCTION

FINEST FABRICS & THREAD, all NYLON
ALL FUSED edge, individually hot cut parts.

EACH BAG INDIVIDUALLY sewn by one highly skilled operator.
WARMFLUFF hand weighed into each space for perfect loft.
EXCLUSIVE DYNAMIC DIFFERENTIAL cut. NO COLD SPOTS
INDIVIDUALLY FITTED, DIRECT TENSION, CONTOUR BAFFLES.

6. MINIMUM WEIGHT AND BULK

SIZED to FIT YOU for minimum weight, maximum comfort.
INTEGRAL pad avoids bottom duplication.
LIGHTEST most durable fabrics & zippers.
WARMFLUFF, the LIGHTEST, HIGHEST LOFT Goose Down known!
DAM, the LIGHTEST,WARMEST bottom support available.

7. REASONABLE COST

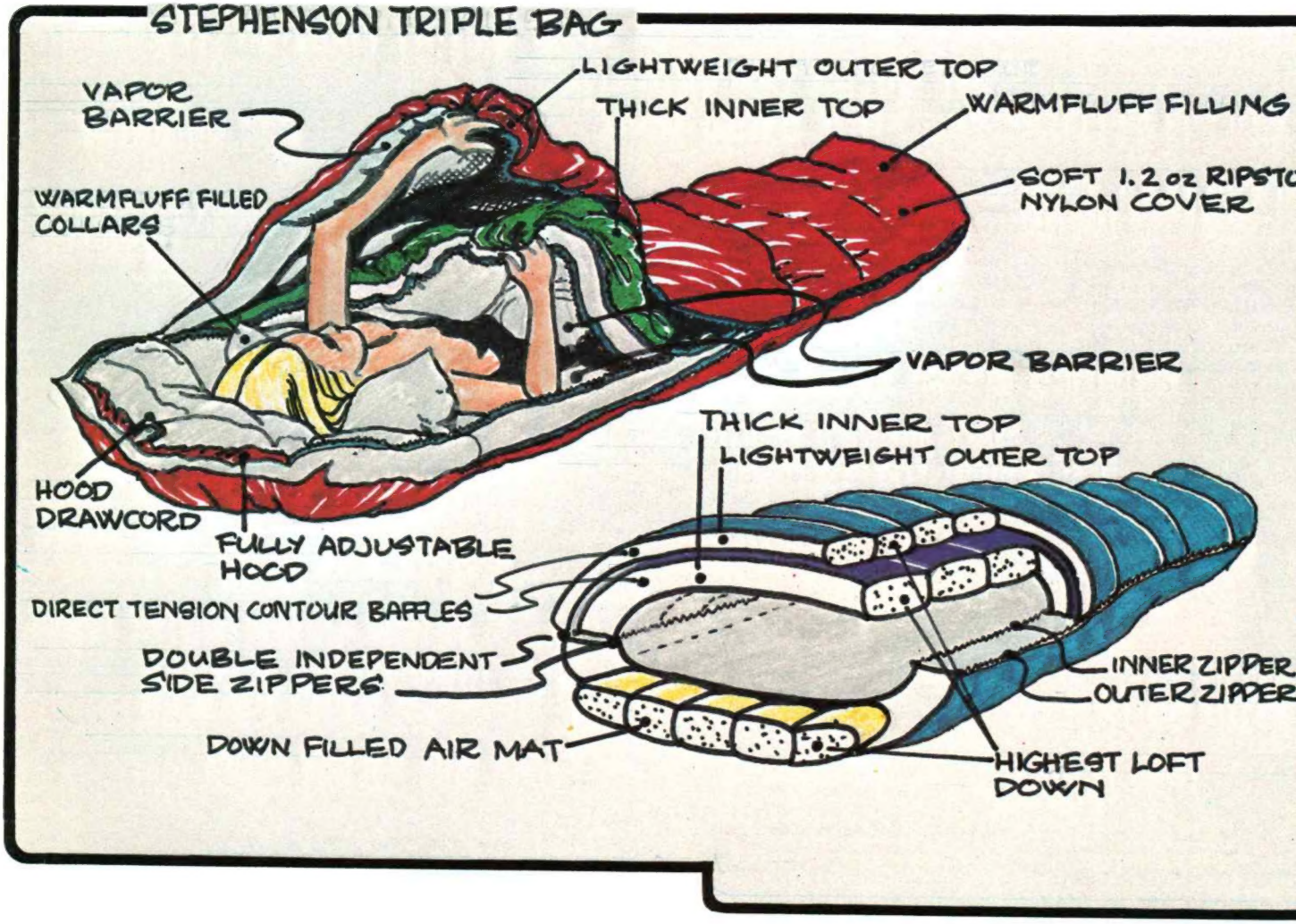
NO extra pad to buy. WARMLITE TRIPLE is complete
The equivalent of 3 to 5 bags for less than the price of 1
No sales markups, negligible advertizing costs.
No giveaways for endorsements . You pay only for what you get, not for someone else's freebie.

TRIPLE and SSSS bag SIZES

Heights	4'10-5'7	5'2-5'9	5'6-6'4	5'8-6'9
Typical	5'4"	5'8"	6'	6'4"
Typical weights of people fitting each girth				
Pounds	90-120	105-140	130-190	170-250
GIRTH	56"	60"	64"	70"
WEIGHT in ounces, each layer, & totals:				
Thin top	16	17	18	21
Thick top	26	28	30	34
Bottom	27	28.5	30	33
Foam pad	27	29	31	33
Total W/Foam	96	102.5	109	131
DOWN AIR MAT	19	21	22	24
TOTAL W/DAM	88	94.5	100	122

Weights can vary due to material variations. These reflect the averages during 1979.

To measure your GIRTH: Stand and hold elbows at side and fore arms out horizontally and PARALLEL to each other. Have a loose fist turned slightly in, on each hand. Hands will then be as far apart as elbows. Measure ALL the way AROUND back, arms, and space across front for GIRTH. (DON'T let arms move together under pressure of the tape!). ALSO measure across back and arms (to outside of arms) at elbows, with elbows TIGHT against sides. ADD that to the length of your FORE arm, including fist and elbow. DOUBLE the SUM should be about the same as GIRTH measurement. Order bag by YOUR GIRTH and YOUR HEIGHT. Do NOT add extra to your height. If you want extra length for some other reason, STATE the REASON, and extra wanted, separately. Remember tho, extra length adds about 1 oz/inch, and if it makes the bag longer than range shown above it will not be return or exchange- able.



Bottom of Bag Alone for Lounging Pad JOAN

An interesting new use for your triple bag: attach tops on one side only, prop up on bushes or cardboard, to make a solar reflector for quicker all-over tan.

TRIPLE BAG AS SUN REFLECTOR

FLOATING IN 32 F WATER GEORG

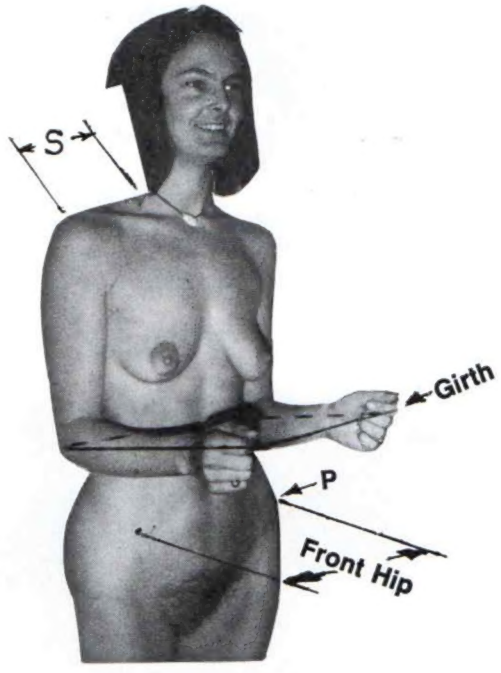
MLITE SLEEPING BAGS:
UE DESIGN FEATURES
e Stephenson Warmlite bag achieves maximum warmth and com-ith least weight through use of superior materials and design es found in no other bags. The cover is constructed of a specially and finished ripstop nylon which combines high strength and ility far in excess of requirements.
ppers are all nylon, thus eliminating problems of corrossion and ng of metal zippers, while further reducing weight. The fill is nest, highest loft, Polish goose down, carefully selected for maxi-loft, and treated to maintain resiliancy and prevent mildew. The s made to uniform thickness with no cold spots and no shifting of wn, with differential cut (outside shell is larger than inner shell amount of down loft, thus assuring that motion within the bag, rotruding elbows and knees will not compress the down.) This uction is more expensive than others, but is necessary for achieving uniform insulation with a minimum weight of down and fabric. nique features found only in WARMLITE bags are: 1. The side ng closed with double zippers; one on inside surface and one on e. This assures full insulation at the zipper, which other makes cessfully attempt to do with a down filled flap, and maintains the dvantages of the differential cut; 2. Integral foam pad to solve ff and cold bottom problems; 3 reflective fabrics to eliminate nt heat loss; 4. Vapor barrier interior to stop evaporative heat loss, nt condensation in the down and to prevent sweat damage of ; 5. Zipper closed parka-like hood; 6. Multi-layer top for all tem-ure use; 7. A down filled collar to stop neck drafts (which is ally available on one other make).
LE BAG TECHNICAL DETAILS!
ith down insulation in a bag, you can expect acceptable comfort eep over a maximum temperature *range* of about 30 deg. F. reflective and evaporative insulation added, you can still only te about a 45 deg. range, and won't be too happy at the limits. To nfortable from room temperature to —50 deg. would thus require arate bags. For comfort over the more commonly found range room temperature to 10 deg. would require 2 bags. We have re-the 3 bags down to a bit less than 1½ bags with our Triple Bag, by providing one bottom, which is similar in requirements for nperature ranges with 2 fully removable tops.
he inner top is twice as thick as the outer top. Thus, with both ou have maximum insulation, with inner top alone you have ⅔ ximum, and with outer top you have ⅓ of the maximum insula-

DES IN SLEEPING BAGS: Although we encourage you to natural living as much as possible, we do not really st sleeping in a sleeping bag in the nude. Sleeping bags are ult to clean; vapor barrier fabrics are not as soft & com-le as porus fabrics (although much easier to clean); and you get overheated (which is often in a sleeping bag) you tolerate the cold air on bare skin. Thus it is best to wear clothes, or PJ's in the bag. Shift your sex play to daylight in the meadows and woods, & use the bag for sleep. The extra light zippers we're getting will allow us to make ical zip out cotton liner for bag bottom, solving the first two ems, but only clothing, or at least a shirt, will solve the problem.

LORS: We often get orders with no color specified. If you don't care what ou get, then state "any" and maybe help us choose by listing colors you Ve notice a general preference for red bags, but more people buy blue. lue seems to be a favorite for tents, possibly because it is pretty but easy eyes and shows dirt less, yet more people buy yellow. This may be e our tents are used for serious mountaineering more than other makes, ibility at night is more important than having a color they like best. But, I t that many who don't need yellow buy it to identify themselves with aineers. I suggest you pick the color you like best and ignore the needs or f others.
rs for sleeping bags are RED, BLUE or GREEN, all with silver interior (a d with red interior which is still silver on side towards the down). Colors ts are LIGHT BLUE, YELLOW, and GREEN.
RTH OF BAGS: When measuring for girth, be sure you measure all the round back, arms, and space between hands. Compare with chart of um height for girth. If you are taller than maximum you probably red wrong. For each girth we expect height to be from about 6" less than um, up to the maximum. We will send bag up to 5" over length, but never than your height.
you order a special girth size, please also specify your width, at s, so we can determine required pad width, and see if the ordered is reasonable. If ordering for a child, *you* must make the estimate wth to determine size to order.

" am still surprised everytime I use my at how marvelous an invention you have gned. Thanks many times."

COLD NECK DRAFTS ELIMINATED
To block all cold drafts from the neck opening, a down filled collar is provided just above shoulder level, which snugly closes the top at the neck. For windy weather, the hood is closed with zippers over the shoulder, creating a form fitting hood similar to a parka hood. An additional draw cord about the face can be used to adjust the opening to any desired size.
With hood ¾ closed you can sleep in any position and cover your head. This is especially nice for us who sleep mostly on our stomach.
FOAM BOTTOMS
The built in foam bottom solves many of the problems of the old style bags which required a separate foam pad unit.
1. It greatly reduces rolling off the pad, and makes it far easier to roll back on if that does occur. This permits a smaller, lighter, form fitting pad.
2. Makes it easy to turn over in the bag, without getting tangled or exposing a crushed, thin, cold bottom side of the bag.
3. Eliminates the cold line along edge of pad.
4. Saves about ⅓ the fill weight and cost, plus weight and cost of separate covering for pad.
5. Simplifies packing. The whole bag can be rolled and put in one carry sack with same effort it takes to roll and pack a separate pad.
6. Reduces packed bulk and simplifies carrying on a back pack. The reduced foam size and reduced amount of down and fabric means less total bulk, and you only have one unit to attach to your pack.
There are many various types of foams available, and similarity of name prefix: poly-, tend to confuse people. Poly- simply means the material is made of large molecules having many of the basic chemical units joined together. Thus polyether urethane has long chain molecules made up of ether molecules, with chains linked with urethane type bonds. Polyethylene is simply long chains of ethylene molecules. We have tested many types of foams, and continue to test them as new ones appear. Back in the 1950's, ensolite (trade name for a poly vinyl type of closed cell foam) was the best insulator for use under load, altho it was bulky, too hard for comfort, and did not last very long. During the 1960's, polyether urethane foams were developed, and improved to the point where they gave much better insulation, with less packed bulk, than an equal weight of ensolite, and provided good comfort and durability as well. We presently use the best polyether urethane foam we can get. A recent development (about 1969-70) has been closed cell cross linked polyethylene, with physical and insulating properties similar to ensolite, but at much lower weight. We do not use it because of its lack of comfort and greater packed bulk, plus tendency to become excessively stiff in cold weather. But, switching to a ½" piece of the polyethylene foam (which is easily done with our bags) will save a few ounces.



Pack and Bag Measurements

"the triple bag is in my estimation the finest piece of equipment anyone has ever turned out. I used the NET top under 'buggy' conditions with very satisfactory results".

"Linda has used your bag down to -70 and says it is the warmest bag there is".

Triple Bag, Hood Open, Collar Closed **George**

Triple Bag, Hood Closed

MATERIALS:

All of the sleeping bag fabric is 1.2 oz./sq.yd. high tenacity ripstop nylon, which we have used since 1958 with no signs of wear or tear. (Lighter weight fabric can be made, and is more than durable enough, but, so far, we have not been able to get it down proof).

The inside surface of the bottom and thick top are coated with a special vapor barrier material. The coating on inner top surface is aluminum pigmented to greatly reduce radiant heat loss. This provides several very significant advantages over old bags with porous interiors. The coated surfaces face away from you, so all you feel is the nylon fabric side.

1. No water vapor can get into the down or foam, thus no condensation can occur and your insulation always stays completely dry. The average porous fabric bag will pick up 1½ to 3 lbs. of water from condensation on a typical cold night, and will take 4 to 12 hrs. to dry out on a warm dry day IF left unpacked. Porous fabric bags will suffer total collapse from excess water in a week to 10 days of typical winter camping, unless exceptionally good drying conditions prevail. Many expeditions and winter climb failures, and deaths, can be directly attributed to the collapse of down insulation from condensation. With our vapor barrier interior, any insulation will maintain full effectiveness indefinitely.

2. Interior relative humidity will rise rapidly from the typical 5% to 15% of a porous bag to a more comfortable level of 60% to 90%. This will greatly reduce undesirable sweating and water loss. The vapor barrier effectiveness depends on how tightly you have the bag closed around your neck, since water vapor can diffuse rapidly thru any opening. You can thus extend the low temperature range about 20 deg. lower than possible with an equal thickness porous fabric bag, yet have the same higher temperature limit by ventilating at neck to allow vapor escape.

4. Sensible (liquid, observable, feelable) sweat cannot get into down or foam. In weather that is too warm for the insulation thickness you are using, you will eventually get too hot, resulting in sensible sweating which will soak you and your bag. When this wakes you, you will attempt to cool, and dry yourself and bag by opening it. With vapor barrier-waterproof interior, all the liquid sweat is kept right on the surface, where it will rapidly dry off, leaving you and your bag dry and cooled. With the old porous fabric bags, much of the sweat wicks into the down (carrying with it body oils, salt, odors and dirt, to damage the down), and cannot be quickly dried out, thus leaving you with a clammy, sticky wet bag.

5. Accumulated dirt on inner surface can be quickly and e washed off without washing the whole bag. Practically all the which gets on a bag or in its insulation comes from the user and ge inside surface. The waterproofness of our bags allows this dirt t quickly washed off with damp-soapy cloth, without subjecting whole bag to down damaging washing or dry cleaning.

6. Provides absolute down proofness on surface against you. "down proof" fabrics will still allow small broken fibers of down the pores. As a bag gets older, fabric will loosen, and even mor these broken fibers will escape. This is actually good, since it pu the bag of useless extra weight. But, if it occurs on the inner sur next to you, and you happen to be wearing clothes in the bag, could come out covered with those fine broken particles, which is sightly and annoying. This is of no major significance, but it ca occur with sealed interior fabric.

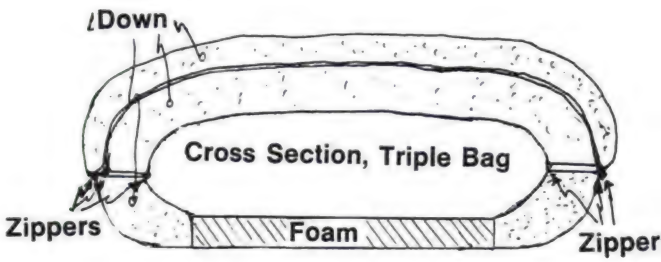
3. Prevents undesirable water loss, the midnight thirst, dehydra and impaired blood circulation. This also reduces water intake, w is especially important when all water must be obtained by me snow or ice. A major cause of frost bite on cold high altitude clim the combination of dehydration and thicker blood due to altitude ditioning which increases red blood cells , thus reducing circula to hands and feet. For maximum protection from frost bite, one sh extend the vapor barrier protection to daytime clothing, using ou sweat shirt, and vapor barrier on feet (baggie or saran wrap) hands (plastic or rubber gloves). This could also be applied to but, due to high heat output in legs, provision must be made for ven tion and controlled cooling when active.

The outer fabric is tightly woven and heat shrunk to provide w and down proofness. Aluminum is vapor deposited on the surface w faces the down, to both reflect heat back towards you, and to re emmission of radiant heat from the bag itself. There are good a ments for facing the aluminized reflective surface towards you away from you, but, since the aluminum will wear off rapidly if posed, the only practical way to use it is to face it towards the d so it will not wear off. This orientation also offers two emotional vantages: 1. The fabric color, not aluminum surface shows, and 2. T people who have unearthed and believe the old, fraudulant, anti-al num scare stories circulated when aluminum pans were first introdu to discredit aluminum, need not worry about aluminum touching the

A light water repellent finish is put on all fabric. This will dew from wetting the bag, but will not keep out rain, or ground w As for any other bag, a waterproof ground sheet is required to bottom of bag dry and clean. Your tent floor, poncho, or light pl sheet will suffice.

Baffles are the same high strength ripstop nylon, only not heat so it is softer, slightly stronger, and down clings to it.

All fabric parts are hot cut individually, leaving a sealed, f edge which cannot unravel.



Lory on Stomach, Hood Closed

IPPERS: Are all nlyon offset coil construction, which makes them er, smoother operating, stronger and more snag resistant than older zippers, and leaves only smooth tape exposed on the inside against occupant.

ides are closed with twin zippers — one on outer surface and one nner surface, with panel between assuring the zippers will not ade differential cut effectiveness or cause a cold line. This design been used exclusively on our Warmlite bags since 1962, and is still only one which totally prevents a cold line along the zipper.

ide zippers are identical on each side and extend 72" below the . A separate foot zipper pair extends around the foot from ends of zippers, thus allowing removal of either layer, or to open foot pendently. You can zip together with another similar bag on either or can zip several together. When using the bag with both tops can open one top on one side, the other on opposite, and let the bag nd to 1½ times normal girth to allow you to dress easily in the bag. in summer you can zip the two opposite edges of tops together, forming a bag for two having 101" girth (our normal dual bag 108" girth.) For this you'll need an extra pad. OR, you can remove tops and zip them together to form a thick quilt for your bed, one side thicker than the other. The bag bottom used by itself es a very comfy lounging pad.

We will make the bags to any height you wish. The standard 72" zips just reach the bottom corners on a 5' 8" bag. If you zip a ter bag to a standard 5' 8" or taller bag the neck position shifts to- ds foot of the longer bag. This shift can be avoided if the taller bag rdered with the short bag, in which case side zips will be made the length on both.

When zipping two bags together it is only necessary to join the r two zippers, which takes less than a minute. Lying loose the pads be separated by about 8". The one who gets into bag last can push two pads together to eliminate that gap. Or, you can take along an a 1½" x 8" strip of foam to lay between the bags, underneath, and have a wider more comfortable pad.

The versatility and easy zip together feature of our bags eliminate need for the earlier dual bags. It is quicker and easier to separate separately pack two bags than it was to remove one top and one for separate packing of a dual bag. If you ALWAYS intend to the bags together, then order your bags with about 8% less girth normal. But remember, if you then use the bags separately they be VERY snug.

OSE DOWN

WN: Only the very best live picked mature Polish goose down is l in Warmlite bags. Live picking of older birds gives the most dur- high loft down possible, and assures constant supply of down since birds need not be killed. This down costs nearly twice the price of er grade downs referred to as prime, grade AAA, northern goose n (which accurately describes down from any bird grown north of equator). It is of interest to note that more mature duck down is ming available, with a loft as high, or higher than these other com- goose downs. A comparison of lofts gave the following results:

Mature L.P. Goose, free loft.....	1150	Cu. in./oz. loaded	825
100% Northern Goose, free loft	800	"	500
Mature Duck, free loft.....	815	"	550
Regular Duck, free loft.....	580	"	380
Dacron — new type, free loft....	225	"	200
Dacron — old type, free loft.....	150	"	140
Polyether foam, free loft.....	110	"	110

There is probably more misinformation about goose down, and the of down (baffle systems), put out in sales catalogs and magazine les, than on any other subject. We do not know if this is due to rance, or intentional efforts to mislead the potential customer, but it ather obvious from the questions we receive that they are very essful in misleading people. For some odd reason, many people are e likely to believe the grandiose claims such as "only our brand is quality down", with no supporting technical data, than the detailed anations and factual information provided by some honest suppliers. ou're that type, do not bother to read the rest of this section. In- l, simply *compare* insulation *thickness per pound* of total weight, don't worry about how it is achieved. But, if you are concerned how that insulation thickness can be achieved, with minimum ht, then read on.

Down is a soft fluffy material which grows on ducks and geese to them warm. Each down particle has many very fine fibers fastened center support. Generally, longer and stiffer fine fibers result in ter loft, resilancy and durability. The length and stiffness of the rs is mostly a function of the bird type, size and age, and slightly enced by diet and climate. The large white geese raised in central pe for meat, happen to produce the best down for lightweight in- ion. The small ducks and geese raised in Asia happen to produce l, soft down which is not much better than the new synthetics, rgard and Fiberfil II, but is used in bags from Asia and New and. Between these extremes are many variations in quality with biggest differences in domestic and European down being due to age of the bird.

The quality of down from any one type of bird varies greatly with the age of the bird when the down is collected. Down from young birds is very soft, but rather low in resiliance and loft. Part of the low loft per pound is due to the large amount of very small feathers, which cannot be separated from the down. This type of down is excellent for garments (such as vests, parkas, and mitts), and thus is often referred to as garment grade down. For garments, the extra weight is of little significance due to the small amount used, and lack of resiliance is a negligable problem since garments are seldom packed as tightly as sleeping bags. At least one company, which used to make top quality sleeping bags, but greatly degraded their design and materials to meet a lower priced market, now claims, for some unknown reason, to use *all* garment grade down in their bags. Possibly the rapidly increasing price of down, or just the soft feel, influenced them.

Most ducks and geese are raised for meat, and the maximum yield of meat per $ cost is achieved with young, immature birds. In the past, down was simply a by-product which had little influence on how the birds were raised. In central Europe, goose liver has been considered a delicacy for which people will pay a very high price. A large liver is obtained from old birds, overfed, and chilled by plucking their down. Thus the old farm technique of regularly plucking the flock of geese to obtain down for the family's quilts, clothes, and pillows, is now a commercial technique for increasing liver yield. The live plucked down turns out to be the very best down available. It is cleaner, pure down, with an absolute minimum of small feathers and broken fibers, and, taken from large mature birds, has the largest, highest loft, most resiliant fibers. The down obtained when the bird is finally killed is also generally very high loft and resiliant. But since it is stripped off wet with the feathers, then washed, dried, and air separated, it will have more feathers and broken fibers in it, resulting in more weight for a given loft.

In the recent past, most down went into pillows, and it was relatively easy to get pure live picked European goose down for sleeping bag use, altho the high price influenced most manufacturers to use lower grades, or mixtures. As the demand for light weight sleeping bags increased, the price for down increased, having rather funny results. The price of the top quality down went so high that only a couple of manufacturers continued to use it, while others switched to the cheaper, more available garment and pillow downs. The resulting price increase has greatly reduced production and sale of down pillows, but has also had some influence on increasing the quality of down. Birds are allowed to mature more in order to get higher quality down and a higher price. Thus, looking at the sleeping bag market as a whole, we find the increase in demand has resulted in a decrease in quality of the *average* down *used* in bags, ie, lower quality pillow and garment grades switched to bags), although the overall quality of down *produced* is supposedly improving. Most manufacturers of *quality* down bags have been very upset over the lower quality and higher price of down available to them. We have used only the live picked Polish goose down, and have paid greatly increased prices to do so. But, some suppliers now absolutely refuse to sell that, prefering to mix the higher grade down with low grade down to obtain an adequate quantity of acceptable medium grade down, and others are trying to get us to accept that lower grade mix. Eventually we may be forced that way, but we can assure you we will continue to use the highest quality down we can buy, to get minimum weight and maximum life. If it becomes necessary to use a mix of the live picked down with lower loft wet picked down, then we will adjust down fill to maintain designed loft, and the main change will be a slight weight increase.

You may wonder what significance the variations in down quality has. One answer is quite simple: higher loft down will reduce weight of down required for a given insulation thickness, thus making a lighter weight bag. But, down weight is only part of the bag weight. It is quite silly to pay an extra $20 for top quality down in a bag to save 4 or 5 ounces of down weight, while using 1.9 oz. or heavier nylon which increases the shell weight 12 ounces, to save $6 in fabric cost! Other manufacturers are quite aware of this, and are thus not about to waste money on higher loft down when they could save weight for less cost. There are even some manufacturers using double quilt construction, which requires twice the weight of fabric, but, by saving labor can reduce cost. Obviously such bags will not be filled with expensive, good quality down, no matter what flowery descriptive phrases are used.

If weight was the *only* difference, than one could simply compare total bag weights among bags having the insulation thickness he desired, and make his selection based on how much he was willing to pay for lighter weight. But, there is one other important factor: durability. Down taken from an older, mature bird is much more durable and resiliant than young down. Thus one might not object to the heavier weight of young, lower loft down, but, he might object to the relatively short life of the down. One solution to this problem, if you're trying to save money, is to buy bags filled with mature duck down, which may only have the loft of the cheaper immature goose downs, but will be more durable. In this case, the often repeated claims that goose down is better than duck down can be misleading, since that statement is only true when comparing similar grades, or similar maturity downs. The mature breeder duck down is generally better in all respects than much of the immature goose down available. Interestingly, the lowest grade of duck down and feathers that I've seen used in any domestically or European produced down bag is con-

Inside Warmlite 2

Company

Triple Bags Separate

Zipped Together

Triple Bag, Thin Top Only , Foot Open **Lo**

siderably better than the best I've seen from Asia and New Z
But, do not be misled by that statement, since I have mostly be
cerned with the higher quality bags put out by reputable firms
North Face, Sierra Designs, Holubar, Frostline, Alpine Desig
so it is quite possible there are some domestic producers usi
quality Asian down, which I'm not aware of, and, with inc
demand for bags and increasing costs for down, it is very lik
lower priced domestic bags will soon be using Asian down. Thus
largely on your own when trying to select low cost down b
warm weather use.

As down ages, it can deterriorate in several ways. Small fiber
off, and are thus useless. It would be nice to have the outer
woven with pores just large enough to allow the small broken
fibers to escape, but not allow full down particles thru. This
constantly purge the bag of useless weight, but, could be rather
ing *if* it occurred on inside fabric, since the fibers would get a
you (they tend to cling to clothes). Also, it is very difficult to
fabric porosity that precisely (altho a lot of fabric we received
fall of 1973 met those specifications almost exactly). We n
specify a far tighter fabric finish. Since our bags all use vapor
sealed fabric on inside surfaces, the broken fiber purging fabri
so annoying.

Washing or drycleaning the down will remove natural so
oils, thus making the down brittle and more likely to break
packed. But, sweat, with its accompanying oils, dirt, and salt, wi
to stick fibers together, thus greatly reducing loft and insulatio
thus better to wash the down to revive loft when it gets matte
far better to never let sweat get into the down, by providing a
proof barrier between you and the down.

If you lie on the down you'll overcompress it, and likely
nently flatten it. Worse, if you slide on it, in the process of
over, you'll roll it into string like fibers, which will never r
(This is similar to the way thread, string, or rope is made.
filled with string made of down can't keep you warm!). To
this, you should fasten your bag down to your foam pad, thus
preventing lying on the down on top and side which is requ
keep you warm (the down in the bottom is useless anyway, so
it by lying on it is of no consequence).

There are some things which can be done to assure that top
goose down will not be wasted where not needed, and thus wi
tinue to be available for use in bags where needed. If other con
would follow our lead, and build foam pads into their bag
avoiding wasting down on the bottom, about ⅓ of the down c
saved. Most down clothing can be made with the new synthetics
gard or Fiberfil II), or the lowest grade duck downs, with neg
weight increase, and a vast decrease in cost. Encourage your
to buy only synthetic fill clothing when it is adequate to do t
Many people buy down bags just for the "prestige" of ow

Triple Bag Showing 2 Tops

n bag. This is O.K. if they get the low quality Asian down, which tle different than dacron, in bags imported from New Zealand, an, Korea and the Phillipines, but sheer waste if they buy quality stic down bags which are too warm for their use. Do not encour- anyone to buy thicker, warmer, or higher quality bags than they

own can be degraded rapidly by packing too tight, by leaving ed for long periods (especially when hot), by excessive packing unpacking, and by washing or drycleaning. Prolong the life of bag, and thus delay the need for replacement, by packing it only n necessary, and for as short a time as possible, and in as large a as possible. Always *roll* your bag and slip the sack over it, to e uniform pressure on the down and minimum wrinkling of the c. Stuffing the bag is a fine way of assuring early sale of a cement bag, and thus is recommended by many retailers. Stuffing ughly wrinkles the fabric, covering it with sharp folds and creases h reduce life. Invariably a stuffed bag has the far end packed while the open end is packed excessively tight, thus damaging the n. An all down bag is a bit difficult to grasp properly to roll (two e can do it better), but it is worth the trouble for greater life. task is simplified if you'll roll your pad and bag together, then t in one oversize sack, which also simplifies packing your back- Of course, on all our bags the foam is built in, so it is very simple st roll up the bag and put in a single sack. A few people have ize backpacks with a built in compartment for an all down bag, provision to carry foam pad rolled separately. For those the tops r triple bag are simply zipped off, rolled and put inside pack, and ottom, which is mostly a covered pad, is rolled separately and ed into a foam pad sack.

FLE DESIGN

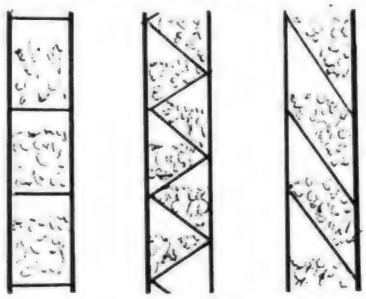
here has been a baffling amount of misinformation spread around rning baffle design in down sleeping bags. Most of theirs appear e based on rigid construction, using a heat conductive material n as sheet aluminum), which repells down, for the baffles. But, in l practice, all down baffles are constructed with soft, non-conduc- fabric which the down clings to. The two functions of a baffle are nstrain the inner and outer covers from moving apart more than own can expand, and to prevent lateral shift of the down. If the es allow more volume between the covers than the volume of down hen the down can easily fall off to the lower areas (along sides), ng a thin, cold top.

oose down is an expandable insulator, but, like a spring, it will expand to a certain volume. If the covers of a sleeping bag were ctly rigid, and thus could not spread apart more than the down expand, then the down could not shift in any direction. But, ing bags are made of soft fabric, which can easily spread apart. no baffles (or with oversize baffles which do not limit fabric d), the down will simply fall to the lowest areas, spreading fabric to make room, leaving the top thin and cold. If baffles are sewn ch a way that the fabric can't spread more than the fill thickness, there will be no room for the down to fall into, so it must stay in . Presently, there are three baffle systems which meet this require- quilt (sewn thru), v baffles, and vertical baffles. Quilt construc- eaves lines of no insulation, and thus is only used on very crude, bags, or with two quilt layers with sewn thru lines offset. The e quilt requires 2 extra fabric layers, and thus is excessively heavy. implification of the double quilt is the V baffle system is often refered to as overlap tube construction. Each section or " of down formed by baffles, has a thick center and thin edges. thin edges would be cold (like quilt construction), but it overlaps hick section of adjacent tube, thus curing the *mythical* problem. ally, the down is just a unformly thick layer, and putting a baffle it on an angle does not change the thickness. It is possible that nall angle a v baffle makes with the cover could keep down out e corner, thus leaving a void. It is more likely that down will be d into the corner, will stick there, then be overcompressed when s stretched out, thus decreasing loft. The main disadvantage of v e is excessive fabric weight. A vertical baffle does the required ost directly, with minimum fabric weight, and avoids the acute s between baffle and cover, thus avoiding weight, and avoids the angles between baffle and cover, thus avoiding over compressing caught in the corner, or voids caused by down kept out of the r.

viously the space between baffles can expand. Thus, the maxi- space will be greater than the rectangular space indicated by flat ces. The ratio of fully expanded volume to flat surface volume ds on the ratio of designed baffle depth to baffle spacing. A plot s ratio is shown below. To achieve a given average thickness, with own shift, the baffles must hold covers slightly closer together e sewn, and down fill must be adequate to expand covers to the expanded condition. — The sketches show how covers will appear flat, in "design" position, and when fully expanded, for a typical sign thickness and 6" baffle space. — You can see why slant baffle are notorious for large down shifts, due to expansion ratio of 2.15 e typical 6" spacing and 4" thickness. A vertical box baffle could aced 12.8" apart with down shift no worse than the slant baffle 6" spacing!

ou must wonder then, why so many others use slant baffles. The ns are varied, but, the most common is simply "so and so does it, and has so much advertizing for it, that we simply must do the same". It appears that the real reason it got started was overselling of the "overlapping tube" idea of v baffles, by Holubar. When they wanted to make a cheaper, lighter bag, they simply eliminated ½ of the v, so they could still show "overlapping tubes", totally ignoring the fact that they lost the required cover restraint when they removed half the baffling.

A major reason for continuing with slant baffles, despite all the complaints about down shift, is ease of selling underfilled bags in the typical hanging rack. When hung from the foot, vertically, the underfill is not so obvious with slant baffles as with vertical baffles. As the sketch below shows, you can easily see light thru the unfilled areas of the underfilled vertical baffle bag, while the overlapping sections of slant or v baffle make the underfill less obvious, altho all would have similar heat loss.



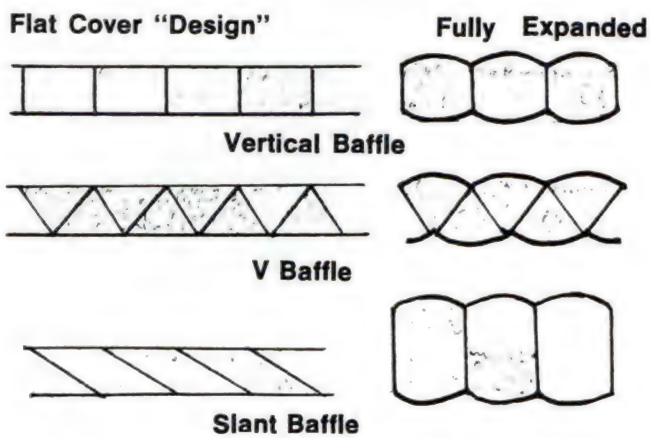
If you plan to sleep standing up, possibly the slant, or v baffle would be a good idea, but not many people sleep standing up.

To detect such under filled bags, hold the bag horizontally, by one side, and *gently* shake it, then lay flat on floor and observe down shift by loft difference between sides. (Violent shaking can pack the down, compressing it, and thus mislead you. In use you will not shake the bag violently, but you will gently shake it.) Slant baffles being grossly under filled by design have very large down shift, and thus should always be highly undesireable. Even considerably underfilled vertical or v baffle bags will have less shift than slant baffled bags, and probably will be quite useful as long as you carefully distribute the down evenly before each use, and avoid active tossing and turning.

There is one exception I know of, regarding slant baffle bags. North Face (in Berkeley, Calif.) calls their bags slant baffle, when in fact, they approximate vertical baffles, since they use undersize baffles, only slightly offset, than fill to almost full expansion, resulting in vertical baffles with twisted ends. Their construction and materials are otherwise as good, or better, than most others, and thus their advertizing of slant baffles should not be taken as a disqualifying defect.

Various materials are used for baffles, for various reasons. Porus, non down proof fabrics are generally preferred, since some of the down can stick to the baffle, thus holding down in place. This is especially important in underfilled bags, and you'll notice an emphasis on net, or loose knit baffling in bags which have had problems with down shift. We have heard of net baffles tearing loose, but that was generally due to mistreatment. We simply use the same basic fabric for baffles as for covers, only in the as woven condition (not heat shrunk or pressed, and thus not down proof). It is softer and slightly stronger in that condition.

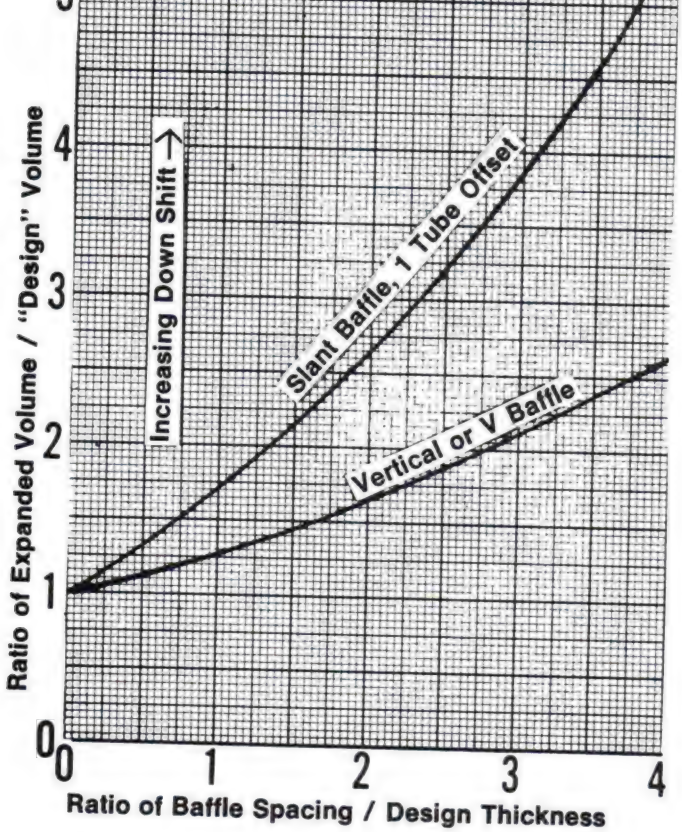
It is possible to have down restricted too much. When you pack a bag you must compress the down, and in so doing you are likely to shift the down. When the bag is unrolled, light shaking and patting will normally distribute the down properly *if* the tubes are not too small, or restricted by down stuck to baffles (as often is the case with close v baffles). This was apparently enough of a problem with Holubar bags to influence them to build lengthwise baffles into their "Ultimate", thus making each tube ⅓ as long as normal. Unfortunately,



All illustrations for 6" space, 4" design thickness.

27 Warmlites, Zipped Together

Triple Bag, Hood Open, Collar Closed



that "cure" eliminates the capability of intentionally pushing the out to the sides to make a thinner top for warm weather use.

By now you may be wondering why everyone uses cross b instead of lengthwise baffles, since there would be less tendenc shift during use with lengthwise baffles. The problems with lengt tubes are the much greater tendency to shift while packing; the culty in redistributing over a longer tube; difficulty in thinning formly in warm weather; and problems with layout and marki tapered bags. With properly baffled and filled bags there is no lem with down shift with cross tubes, and the makers of impr baffled and filled bag obviously don't know enough, or care en to make lengthwise baffled bags. There is also the bad image pro Some very poor down bags were made in the past with lengt baffles, so considerable advertizing effort was put into convi people to identify quality with cross tubes, junk with lengthwise (similar to recent efforts to identify center top zippers with junk s because some very poor quality bags have center top zippers.

AIR MATTRESS

Polyether foam pads have proven to be the most reliable, reaso comfortable insulation under a sleeping bag, but the bulk, as wi foam pads is objectional. Air mattresses have had the advanta minimum bulk and most comfort (softness), but have had the backs of inadequate insulation for damp ground or snow, exc weight (or unreliability in light weight ones), and difficulty of tion. We have complete prototypes of a new airmattress designed directly interchangeable with the foam pads in Warmlight triple which eliminates all the previous drawbacks. It is light (about 2 including pump), warm as a foam pad, due to down filling, very able urethane coated nylon, and extremely quick and easy to infl deflate. The sleeping bag carry sack forms the pump: A short p tube fastened in bottom of sack is plugged into a socketvalve in th mattress. The sack is opened, to fill with air, top is folded closed, air is simply pushed out of the sack into air mattress. It is diffic imagine how rapidly and easily the air mattress can be filled this until you have actually tried it! A small flapper valve in th mattress prevents air from escaping, yet you can simply hold it with a finger for rapid deflation.

The air mat is constructed with box baffles to give maxi thickness with negligible changes in circumference, so it can fit di in the foam compartment. A combination of sewing, heat sealing gluing is used in construction. A foam "baffle" is glued in aroun valve, to let air in and out, but keep the down in. Since only dry air is pumped in (you should not blow it up by mouth), wh generally warmer when let out, the down is always kept dry and (We tried a down filled air mattress back in 1958, but blowing it mouth resulted in rapid saturation of the down).

Since each air mattress is individually hand constructed to fit individual bag, the cost is necessarily high — excessively so, i opinion.

DOWN AIR MATS (DAM): (We would really rather insulate them with so we could call them UP air mats.) Two years of production and use of Goose Down filled air mats, DAMS, for triple bags has proved their reliabil and superiority to foam for warmth, comfort, minimum bulk, and weig Fitting them in the space allowed for foam pad, which was restricted by bulk a weight of foam, results in a narrower pad than desired and a decrease in effect girth of the bag. The much lower bulk and weight of DAM permits a wider m comfortable mat to be used, but this requires a significant change in bott construction, making a better bag with DAM, but making it impractical substitute a foam pad for the DAM. We will thus sell bags with 2 bottom desig present foam pad bottom, and new wider DAM bottom.

"the DAM's extra width & length, & la outer tubes solved the problem on other m of roll off. I can RELAX & SLEEP easily"

Down Filled Air Mattress

CONSTRUCTION

y ways of seaming fabric have been ed to achieve strength, durability, nce & to correct fabric problems, such ling. Unfortunately the seams that veloped to work best on cotton are far he best for nylon, yet continue to be as the best by many un- or cated writers of books, magazine s, and catalogs. If the fabric edge pulled apart (frayed) AND the threads cky enough to resist pulling more than hreads at a time, then a necessary and ent way to seam it is to fold back the ge into the seam (such as flat felled or to cover the edge with a piece of tape (very popular due to simplicity tomatic binders). These methods work n tightly woven cotton, acrylics, and The typical Nylons used in most light king gear has very slippery thread. If ke cotton normally is, a seam can pull out despite using the best seam.

only way seams in woven Nylon (such stop, taffetas, twills) can be made ely secure is to hot cut (fuse) the or glue edges with coating and seam . If either of these methods is used e can be treated like a woven edge and designed for maximum strength, ess, ease of seam sealing, or nce, as needed in the product. Good will avoid putting seams at points of loads, so that seams are seldom to the strength of the fabric. But HANDLING can often put far higher n seams than any other use. Hang on tent next to a top middle seam that ets any load when set up, while it wildly in a wind, and you can easily d it or the fabric. Baffle seams on et almost no load in use, but could be overloaded in a washing machine.

y a couple of manufacturers bother to t Nylon parts. If you buy it in a ou can be sure all edges are knife sure way to check is to look for edges under, or binding tape hiding the cut lf the item is otherwise acceptable to d you buy it, first thing to do is ll seams with seam sealant that will ges firmly together. Adhesive-sealant sell, and sealants that work on will generally work well. But, if it water repellant finish, or you are in then ask for our prepolymer adhesive , which sticks to almost anything, but e used soon since it is likely to cure can in a month or two.

TYPES OF SEAMS

LE EDGE SEAM: ideal for loaded exterior seams. Easiest to al (single line on exterior only). roof, soft & flexible, about 70% of strength. Double stitch may be used urity but does not increase strength.

LE FLAT LAP: used for flat construction requiring highest n. Single stitch used where it will sealed between the lap forming an e bond as strong as the fabric. stitch achieves up to 95% of fabric n. Difficult to seal due to thru s. Thread exposed to wear. Sails are igzag stitched both to hold edges flat make seams easy to rip out for shape ent, altho zigzag will not wear near g as straight stitch. If edges are under to hide them, as is necessary on that frays, it is called a flat felled Automatic folders are used for that, lt one of the easiest to sew, and thus almost all mass produced tents.

INSERT SEAM variation on simple flat lap used to attach an edge in middle of a panel, such as baffles in sleeping bags.

TUCK STITCH a variation on insert seam that hides the thread on outside. This is widely used on sleeping bag baffles when coarse, easily abraded thread is used (such as cotton or polyester), but it makes a stiffer, lumpy seam and puts exterior fabric loads directly on the thread.

EXTERIOR EDGES: Folded in , makes a neat balanced seam with minimum bulk. ROLLED for hiding edges that are likely to fray. Other methods are BOUND , and SERGED (zigzag stitch around edge) often used on knits and cheap clothing.

Often you will read in books & magazines that the mark of good construction is use of flat felled seams. You should then ask, how come you don't see flat felled seams in highly loaded items like sails or parachutes? How come you DO see flat felled seams on the cheapest imported and heavy roadside tents? The use of flat felled seams only proves edges are hidden, which isn't good, may be bad!

THINSULATE, POLARGUARD, HOLLOFIL

These synthetic insulators are excellent for warm clothing. They weigh about FOUR times as much as the Down we use, for a given amount of insulation, and just about the same as most Down used in clothing. When comparing parkas, compare TOTAL weight, not just fill weight or type. Generally the extra weight of fabric used for double quilt Down parkas weighs more than the fill weight, so the Down one comes out HEAVIER than the synthetic fill! Then the only reason for buying the Down parka would be if it had to be tightly packed in your backpack.

Thinsulate has the advantage of being half as thick for the same amount of insulation and weight, which is nice for form fitting clothes, an advantage for skiers and possibly climbers. Offsetting this advantage is the fact that it must not be tightly packed, or it will lose it's loft and be cold.

All of these have been falsely advertized as warm when wet, which is ridiculus! They lose 1/2 to 2/3 their loft when wet, the water conducts heat much faster, and they are slow to dry, although not near as slow as wool, which is also 4 times heavier. It is interesting to note that an equal thickness of Down was found to dry out in the same time as Polargard! We think of Down as slow drying, but that is because of familiarity with very THICK Down bags, often left to dry with all the down left in a lump, instead of spread out.

Wool is excellent for summertime sox because it absorbs so much water and, being a poor insulator, won't overheat your feet so much. Just be sure to change them often, and keep the wet ones hung on your pack to dry, because they are extremely slow drying. Wool worn right against your skin will feel warmer than other fabrics, IF you don't wear vapor barrier, because it rapidly wicks up moisture, drying the skin and reducing evaporative cooling on the skin. Unfortunately, that drying also causes severe skin irritation on most people. New or Oiled wool tends to be fairly waterrepellent at first, so is OK for short term use in wet weather. But, after awhile it soaks up a lot of water, and then is cold, heavy, and VERY SLOW to dry. Cold wet wool sweaters only are good for ballast weight when sailing in hot weather on small baots. On a backpack trip they are a disaster!

WARM WHEN WET ??????????????????

What is warm when wet? A HOT TUB! But certainly NOT ANY porus insulation used in clothing or sleeping bags. All porus bulk insulators, such as polyester, Hollofil, Polargard, Thinsulate and even Down are terribly COLD when wet. To stay warm you must keep those insulations dry. It won't make you any warmer sitting in a freezing wet synthetic fill jacket, knowing it'll only take 6 hours to dry instead of the 8 hours a Down jacket would take, because you could have a severe case of hypothermia before then! The many insulations used will all keep you warm IF YOU take the simple precautions to use the excellent rain gear now available AND aviod soaking it with sweat, by wearing a vapor barrier shirt with proper heat loss regulation.

You may have noticed that DOWN is worn by WATER birds, while dryland birds, like chickens or turkeys, do not wear Down. But those water birds always keep their Down DRY!

Foam insulation can keep you warm when wet. Open cell foams will not hold much water, and will maintain full loft when wet, altho evaporative heat loss goes way up. Closed cell foam, such as used in wet suits, cannot absorb or pass water, so insulation effectiveness is unchanged when wet, and, as in a "wet" suit, you stay warm because you stay DRY! (Note that a "wet"suit that is not close fitting enough to keep you mostly DRY, will NOT keep you warm). Closed cell foams will provide about twice the insulation per inch of thickness as porus insulators (Thinsulate comes close to matching that), but unfortunately are stiffer and heavier for the same insulation, and cannot be compressed for packing.

COLORS IN CATALOG

Please DO NOT select colors for anything from what you see in the pictures! Those pictures were taken at various times from 1958 to 1980, and sometimes show colors that are no longer available. It won't hurt to ask for any color you wish (sometimes we do get some other colors), as long as you also include a second choice that matches a color we have stated as available. Note also that the colors shown have gone thru 3 different reproduction processes in getting them on the printed page, and thus are not likely to be exactly as they really appear (actually, I'm more amazed at how close they do come). Also note that where others only offer ONE color, we typically offer THREE or FOUR, or even combinations.

NUDE PICTURES

Ha, got your attention! Occasionally we get complaints from girls objecting to the lack of male nudes in the catalog. The reason is very simple: girls are told they have beautiful bodies from the time they are little, and they observe regular, open admiration for the female form. Thus many of them are quite happy to be seen and photographed nude, especially if they have taken good care of themselves. But boys seldom observe any admiration for the unclothed male body, and are often told it is bad or dirty to be caught nude. Thus when the male finds out how comfortable it is to be natural he often gets quite verbal about promoting nudism, but remains bashful about being seen nude. I have frequently asked those complaining girls to supply us with appropriate pictures to use, but so far never got any. So girls, if you want equality, you'll have to reverse the trend, convince males that their bodies are also nice to see, and that they should be as free as the girls to go nude. Meanwhile we'll continue to use the pictures we have to make the catalog both educational and interesting.

BRIEF HISTORY OF WARLITE SLEEPING BAGS

Stephenson Warmlite sleeping bag development started in 1955 and has had a continuous program of improvement based on experience, testing and engineering analysis. Starting with an all down, zipperless, box baffled single bag in 1955 (which *still* surpasses all other make bags presently being produced for warmth and light weight), we tested and analyzed numerous ideas for improvements, many of which were suggested by our customers. The major improvements were the addition of double side zippers (1957); shaped fitted hood which zips over shoulders (1957); change from oval to rectangular foot, to allow greater foot spread (1959); full drawstring closure (collar) around neck (1958); change to 1.2 oz. high tenacity ripstop nylon (1958); addition of two different thickness tops (triple bag) (1959); built in foam bottom (1965); vapor barrier inside fabric (1966); aluminized reflective fabric (1968) (tested in 1961, material commercially available 1968); removable outer top on triple bag (1969); removable inner top on triple bag (1971 as option, 1973 as standard).

From 1957 to 1972 we offered single top bags in any loft, girth or height, with option to zip together, and a dual bag to sleep two. Relatively few dual bags and zip together options were sold. Frequent comments on those in use confirmed our experience that two in one bag is less efficient, either for warmth or comfort, than usings separate bags, (although often more fun in warmer weather). By 1972 we found most of our sales were triple bags. When we made both tops fully removable on all triple bags in mid 1972, *only* triple bags were purchased, so production of single top bags was stopped. The zipper arrangement to allow both tops to be removed also made it possible to zip bags together on either side, thus eliminating the need for a zip together option or for the dual bag, or for selecting right or left bag. In fact, any number of bags can now be zipped together, as shown in the picture of 27 bags all zipped together!

Many other ideas have been tried, but were not put in production either because they offered no worthwhile advantage, or were impractical to produce, use, or pack. Many others are still being worked on. A few of the more interesting "failures" are listed here, since they get suggested so often in one form or another:

Dacron bottom; we made four in 1960. They were heavy, bulky, insufficient either for warmth or comfort. Foam bottom solved problem.

Built in hammock bottom. Inside bottom fabric was extended to form hammock for either side or end suspension, with down hanging underneath. Made in about 1961, it worked, but was difficult to set up and not very comfortable.

Shape bag differently — more tapered, less tapered, wider in middle, wider at shoulders, flare at foot, etc. Obviously there are reasons why each shape variation could suit a particular person. It is just not feasible for us at this time to adapt to them. We offer more variations in girth and length and color than any one else. To vary shape for each customer would require separate patterns and fill schedules for each, and would run cost up above reasonable level. Therefore we have adopted the shape which we have found provides comfort for most people with minimum weight and bulk. We can still adapt to realistic special needs, but will have to charge for the extra time required for such custom work.

Make bags for children. We do and will. But, the large range of sizes possible, and rarity of orders (most people simply won't pay for such a quality bag for a child who is going to rapidly outgrow it) makes it unfeasible to list every possible size. You can approximate cost by multiplying girth times $

Make foot bags to be used with down parka for bag. This is a nice sounding idea, except that you need several times as much insulation when sleeping as you need when awake and active. Thus, if your down parka is warm enough to sleep in, it'll be too warm for any other use, and thus taken only for sleeping. A sleeping bag is lighter and more comfortable to sleep in. If it is cold enough to wear parka during day, you'll need much more insulation at night. You can best use your parka as extra insulation, with your bag, if you'll open parka up and lay it out on top of the bag. Strategically placed snaps or velcro tabs can hold it in place.

Foam and or dacron insulation. Fine for warm and wet use, such as on boats, river trips. We made our own bags for use on boats using ¾ inch foam. Although heavy and bulky they work very well for warm weather. If we were to produce our triple bag with same warmth using the best available synthetic (Polargard, slightly better than Fiberfil II), the weight would increase 7 lbs., and packed bulk would double.

Waterproof bottom or waterproof complete outside. With our vapor barrier interior it is possible to put waterproof exterior on the bags, but not practical. Even if the bag were completely rainproof, with rainshield on hood, you couldn't get in or out of bag in a rainstorm unless you had either a rain shelter such as a tent or tarp, in which case rainproofing of bag serves no function, but makes the bag heavier and more difficult to pack or unpack. A waterproof bottom could help a few people who do not take a tent or a poncho to serve as ground cloth.

" just want to tell you how impressed I am with the quality of my tent and bag - really flawless!"

Use different zippers,or velcro. This suggestion comes only those unfamiliar with the YKK coil zippers. We have used them 1968 with no failures on bags tent and packs, and have found the be the smoothest running, best sealing, softest and lightest fully rel zippers available. There may be others as good (we keep looking haven't found any yet). When a better zipper becomes available use it! Velcro is good for spot closures only, and is not a zipper rep ment, since it is bulky, stiff, and difficult to align. We use it on col

Heavier nylon is often suggested, simply because others use it. started with the heavier, stiffer 1.9 oz. ripstop in 1955, progresse the better 1.2 oz. ripstop in 1958. Having had no problems with bags or tents (including tent floors) since then, we see no reason we should go backward to overweight cheaper stuff. Maybe other not feel the lighter weight and better feel can justify the much hi cost of 1.2 oz. ripstop nylon, but we do.

Use different baffle designs. This suggestion often comes from do not understand the function of baffles, so they count the numb makers using each type of baffling, then select the most used as If this approach was correct, then we should all be making c covered quilted dacron bags. We have never had any problems down shift in our bags. We have consistently used closely spaced v cal box baffles. You'll note that many others use different baffle tems on different bags they produce, clearly indicative that they ca decide which is best. It should be obvious that a vertical baffle most consistently hold a uniform size space for the down, using r mum weight of baffle material. For the same size down tubes baffle will use about 50% more baffle material but will be cheap make since the material need not be cut into strips, and less sewi required because each line of stitching holds two baffle sides. V fling will hold down in position as well as vertical baffling, bu feel it is worth the small cost increase to save weight with box baff Slant baffles are simply understuffed box baffles. The only reason using a slant baffle is to make the under fill harder to see in a hung *vertically* in a store display rack, and in fact, if you intende use the bag standing up like that the slant baffle might actuall warmer than a similarly underfilled box baffle.

Use hidden baffle seams, as one other manufacturer now does. consists of sewing baffles to a fold in cover material instead of onto cover. This hides stitches from view and makes a smoother face, but any tension on cover fabric is then applied to stitches ins of directly thru fabric, which is likely to result in seam failures. is claimed to improve seam life by protecting thread from abrasion, we have produced bags with exposed thread since 1955 with nev sign of thread abrasion. If others, who only recently started ma down bags, have had problems with thread wear, then they sh consider a switch to more abrasion resistant softer nylon thread. cotton covered dacron, or all dacron thread is easier to sew with to its stiffness, but that same stiffness prevents it from stretching the nylon fabric thus overloading the thread, making seams feel h and leading to rapid abrasion. The main advantage of hidden sea smoother feel, but, underneath you, where you'll feel seams most, construction leaves lumps while on our bag, with built in foam tom, there *are no* exposed seams to lie on!

TEMPERATURE RANGES

In 1972 and prior years, when we offered many different thick single top bags along with our triple bag, we included tempera charts to show average comfort ranges for various thickness People vary considerably in their tolerance to temperature extre and, even the same person can get drastically different results just to such minor things as being hungry, getting excessively chilled, b overtired, having a cold, smoking, or drinking alcohol. Since our t bag provides a layer equal to average, warm down bags, and bined tops warmer than any other bag available, we felt is unnece to include a temperature chart in 1973 when sales had switche triples only. But, questions received indicate people do want to see a chart. Also, we've received sufficient additional reports to pro include the effect of vapor barrier and reflective insulations, w increase warmth when closed up snugly around you, but do not see effect warmth in warmer weather when open about the neck. Thu temperature ranges shown for our bags, with vapor barrier and re tive insulation, are drawn sloped, to relate the increase in insul to an equivalent thickness increase. We are offering a choice of or vapor barrier fabric on inside of the thin top, so a separate li shown for each type.

The solid lines show comfort limits, for reasonable sleep, for " age" people. These lines, and the tolerance bands about them, are b on many accumulated reports from users of our bags, as well as other down bags. The numbered points are the catalog claims of other makers, and apparently represent the minimum temperatures hardiest users have reported. Altho many of these others still pu the grossly misleading figures from the old army reports (also sh on our chart for contrast, and a good laugh), you'll find their mini temperature for each product have come much closer to reality. I have rather mixed feelings about others exaggerating the perform of their gear: on the one hand, I do not like to see people misled, do not like to have people cold and suffering due to inadequate But, on the other hand, many of our sales are the direct result of p being misled into buying inadequate gear, and thus, when they to replace it with adequate gear they buy ours instead of the wa model offered by the guy who mis-led them. For you people who

see extreme performance reports, you'll be pleased to note we've had
ur reports from Alaska of people claiming to sleep warmly in our
gular triple bags at measured temperatures of —70° F. But for the
t of you, who are not so hardy, please try to evaluate yourself rela-
e to others, to know if you are average or a cold or hot sleeper, and
low our chart accordingly. If you believe you'll be warm at lower
nperatures with less insulation, as others indicate, then you can plan
colder weather use. MANY MORE -60 TO -70 REPORTS SINCE,
Down provides somewhat of an automatic compensation for tempera-
e changes. When warm, it picks up moisture from the higher humid-
air, and tends to cling together more, thus reducing loft. When cold,
drier air tends to dry the down, increasing its resistance, and thus
owing it to pick up a considerable static electric charge, tending to
ff if up more. But, this capability can be rapidly destroyed if the
g interior is porus and allows water vapor from you to condense in
down.

When down is packed, the fibers interlock, greatly reducing the
when unpacked. Thus, in warm weather, if you simply unroll
ur bag, with minimum disturbance, you can end up with less than
normal insulation, and thus reduce overheat. In colder weather, vig-
usly shake and fluff the bag, to relieve interlocking friction between
ticles, and get the maximum possible loft. If you have an under
ed bag, or one with slant baffles which thus acts as an underfilled
, which lets the down easily shift off to the sides, it is especially
portant in cold weather that you fluff the bag, then distribute the
vn uniformly by careful patting, then be very careful not to toss and
n much, so you will not shake the down off to the sides.

If you find your bag is too cold, even after proper fluffing, you can
the following. 1. If the bag has porus interior fabric, wear our no
at shirt in it, or, lacking that, put on your rain suit or wrap up in
r poncho. *Do not* put your poncho, space blanket, or any other
stic or coated fabric over the *outside* of the bag.

2. If you have a light down parka, lay the parka on top of the bag.
you plan for this in advance you can put little velcro tabs, or cord
on the bag and parka to allow you to fasten the parka over the
. *Do not* wear your down parka in the bag, since it is less effective,
awkward, and can be very damaging to the down in the parka
re you lie on it.

3. If your only parka is heavy, insulated with dacron or foam or
ilar, you may find laying it on top of your bag makes you colder
use it will compress your bag more than it adds insulation. In that
, wear it inside the bag, or lay it under the bag if your insulation
er you is inadequate.

4. Breathe into the bag. The heat in your breath will warm the
and the humidity will reduce evaporation and resultant chilling
our skin. This is *not* likely to make your bag wet, as some suspect,
e all you are doing is *changing* the *source* of water vapor in your
not the net amount.

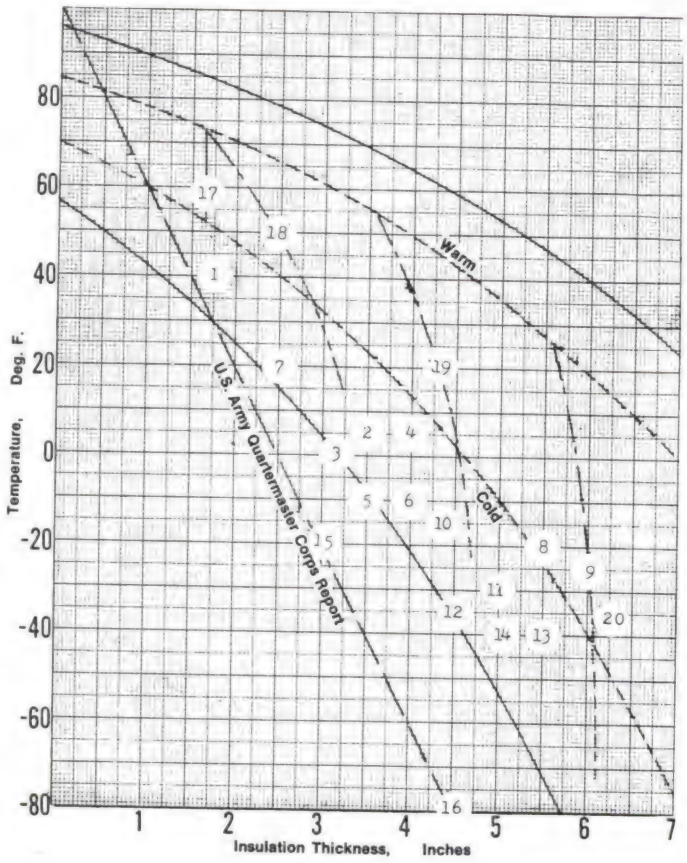
5. Keep your head covered. Your head is kept warm by blood circu-
n, no matter how cold your body feels. Thus, although you feel that
head is plenty warm, and doesn't need covering, it can actually be
major point of heat loss. There is thus a lot of truth in the old
ng "If your feet are cold, put on a hat".

Thin Top Fully Closed, Lory

. Don't get chilled in the first place! If you wait till you are
rably cold and shivering before you put on extra clothes, or go to
you may find it is impossible for you to get adequately warm, no
er how good your insulation.

. If you know you have adequate insulation, or heat source, and
to warm up extremities, such as hand and feet, drink *small* quan-
of alcohol. *Caution* — As altitude increases, the effect of alcohol
our mentality and breathing increases. Above about 8,000 ft. (de-
ing on your degree of altitude acclimatation) alcohol is dangerous.
hol improves circulation to extremities and is thus useful for warm-
ands and feet and preventing frostbite, but, it *only* does so at the
nse of other body heat. Thus, the net, overall effect of alcohol is
duce total body temperature, but to improve your tolerance for cold,
protect extremities. Since alcohol also interferes with the pickup of
en, a small amount of alcohol can result in a terrible case of alti-
sickness. So save the alcohol cure for low altitudes.

NET TOP



	Make	Model		Girth	Weight	Notes
1.	Gerry,	Appalachian	X	60"	3 lb. 5 oz.	Duck down
2.	North Face,	Superlite	X	60"	3 lb. 2 oz.	
3.	Alpine Designs,	Summit	X	58"	3 lb. 13 oz.	
4.	Sierra Designs,	#200	X	63"	4 lb. 11 oz.	
5.	Frostline,	Bighorn		60"	4 lb. 11 oz.	Kit
		Cougar		60"	6 lb. 8oz.	foam bottom
6.	Gerry,	Mountaineer	X	63"	4 lb. 8 oz.	
7.	Northface,	Bigfoot		60"	4 lb. 8 oz.	Fiberfil II
8.	Ski Hut,	Chevron	X	54"	4 lb. 10 oz.	
9.	Sierra Designs,	Expedition	X	63"	5 lb. 12 oz.	
10.	North Face,	Ibex	X	64"	4 lb. 4 oz.	
11.	Northface		X	64"	5 lb. 5 oz.	
12.	Alpine Designs,	Everest	X	60"	5 lb. 6 oz.	
13.	Holubar,	Ultimate		63"	6 lb. 1 oz.	
14.	Gerry,	Expedition	X	64"	5 lb. 7 oz.	
15.	Rec. Equip.,	McKinley		—	4 lb. 8 oz.	
16.	Rec. Equip.,	Denali		—	5 lb. 8 oz.	
17.	Warmlite,	(thin top) porus		69"	2 lb. 12. oz.	
18.	Warmlite,	(thin top) vapor barrier		69"	2 lb. 12 oz.	
19.	Warmlite,	(thick top)		64"	3 lb. 10 oz.	
20.	Warmlite,	both tops		64"	4 lb. 10 oz.	

1974 DATA

X = DISCONTINUED BY 1979

TOTAL INSULATION

Most sleeping bags provide some sort of insulation to reduce conductive heat loss, using bulk fillers such as Dacron, Polargard, Hollofil, Foam, or various duck or goose downs, but no protection against evaporative & radiant heat losses, which may account for over 60% of your heat loss! ONLY Stephenson combines insulation against all forms of heat loss:

For conductive insulation only Stephenson uses "Warmfluff", the very highest loft, most durable insulation known. Others may tell you there is nothing better than what they use but, simply check for yourself: COMPARE the weight and loft of similar bags. Obviously the higher the loft per lb. of bag, the better the insulation value per lb.

Radiant insulation is achieved by coating the inner surfaces (facing the insulation) with aluminum, an expensive but virtually weightless process that adds considerable warmth to the bag.

Evaporative heat loss is controlled with a soft, quiet vapor barrier fabric on all interior surfaces, & a fully adjustable collar to control humidity loss; fully closed for up to 22 degrees warmer, open for maximum cooling. This can prevent the loss of up to 4 lbs. of water in a night, which typically occurs in a porous bag, thus preventing dehydration and heat loss equivalent to melting 28 lbs. of ice! But even more important, the vapor barrier totally stops condensation in the bag and blocks sweat, due to overheat, from soaking the bag. Thus with a WARMLITE bag you won't find your insulation collapsing with accumulated water or ice, or your bag getting 2 to 3 lbs. heavier each night. No more hanging the bag out to dry all day!

TOTAL ADJUSTABILITY:

The TRIPLE bag comes with TWO Down tops, plus has THREE other tops available. The SSSS comes with all FIVE tops for ALL weather conditions.

The THIN top is 1.8" thick (like a 3.6" loft bag), and is used for 30 deg to 65 deg weather. It is made extra wide and extra long to go over the thick top. Thus when used alone it gives 5" extra girth, and head end folds over shoulders like a collar.

The THICK top is 3.8" thick (like a 7.6" loft bag), and is used for -10 deg to +45 deg weather. It has double zippers, collar, and full hood closure.

The THICK and THIN tops can be combined in two ways: Zipping the THIN top over the THICK top extends range down to -50 deg to +10 deg. Zipped side by side to form a large quilt, and zipped to each side of the bottom you have a very roomy bag with a variable thickness top. Merely pull the top across you for right match to any temperature between -10 and +65 deg!

An EXTRA THICK top, 5.6" (like the THICK and THIN combined, equivalent to an 11.2"loft), is supplied with the SSSS to permit a saving of about 7 oz. when used in winter instead of the THICK and THIN combined. For additional cost of half the basic bag price you can purchase this top for regular TRIPLES. (a VERY expensive way to occasionally save carrying 7 oz.)

SINGLE SHEET & WATERPROOF COVERS

The optional waterproof cover can zip on to protect against rain, dew, or drips from a snow cave or leaky tent. It can also be used alone as a windbreak cover in warm weather when the thin Down top would be too hot. The zip on waterproof bottom will protect against ground water or dirt when used without a tent, or can zip to the waterproof top for a "bivy" bag (altho obviously an $.89 plastic drop cloth can serve the same purpose much cheaper and lighter!).

NET TOP

The double mosquitoe net top will allow you to sleep nude in the hottest weather completely protected from insects. The outer layer is extra fine 'noseeum' netting, and is held off the inner layer with 3/4"foam spacers, so no bug can bite you where inner net touches you.

COTTON BOTTOM COVER

Normally you will wear clothing of some sort in the bag, both to keep the bag clean and to give you some protection when you open the bag for cooling. But, when it is hot and you have to sleep nude with the net top, and you still sweat, it is nice to have a soft absorbent sheet under you. The cotton bottom sheet serves that purpose. It can be made two ways: 1. With separate zippers so it can be used with other tops. This adds extra zipper weight and you will always have the extra zipper half in the bag. 2. With zippers that zip to bottom inner zippers. This way the bag bottom isn't changed but the net top must be made to zip to outside zippers on bottom.

A soft "Warmfluff" collar seals around the neck and over the shoulders to prevent loss of interior warm air and humidity, without having to close the hood. Simply adjusting the collar can control heat and humidity, giving a 20 degree EXTENSION of temperature range!

The hood has a unique closing system that allows full closure over shoulders & head without restricting breathing or sleeping position. No wrinkled rough drawstring is needed, and there is no need to sleep in one position, tightly holding the hood opening to your face, as is needed on other bags. Only with a WARMLITE bag can you fully adjust for all weather conditions, then relax and sleep as you would in a bed.

DOUBLE, INDEPENDENT zippers on each side and across the foot provide an absolute seal, with no cold spots, no floppy "draft tubes" to snag zippers or get pushed aside and cause drafts. Unlike all other bags, the Warmlite Triple lets you INDEPENDENTLY open the foot for cooling in hot weather. (no two way sliders, which are difficult to operate).

The tops will zip to each other to form a large quilt. Zipped to each other and the bottom they form a very roomy bag, with instant thickness adjustment simply by shifting the top(s) sideways!

Ever try to dress inside a bag in very cold weather and found it far too tight? That problem is solved with a WARMLITE TRIPLE: simply unzip each top on opposite sides. They can then expand as needed yet still fully cover you !

Need to use the bag without rain shelter? Simply zip on the waterproof covers and the bag is fully protected. With the waterproof bottom you can actually float, like the geese who originally wore that Warmfluff Goose Down!

TOTAL SYSTEM:

To sleep comfortably you need adequate insulation all around you, and padding under you. Only STEPHENSON provides the FULL system.

Bulk insulators used in sleeping bags are selected for light weight & easy compression for packing. But that easy compression leaves

NO insulation under you. Foam pads placed under the bag have been the standard for many years now, since foam provides good insulation under load. Open cell foams provide good comfort while air mats give best comfort. But, there have been severe problems with both: First, it's difficult to keep a bag on a small loose pad or air mat.The insulation in the bag is crushed and damaged under you. With a loose bag it's difficult to turn over without also turning th (often rolling off the pad), which exposes the thin crushed bottom, crushing what WAS the top. By buildi pad INTO the bag, as only STEPHENSON the bag becomes as stable as a bed, y toss and turn without rolling off the p crushing of insulation occurs, & the considerable saving of weight and bulk.

Airmats of the past were cold becau was free to circulate within them. Thu was used for all cold weather and camping. Opencell soft foam provide comfort & low weight for a fixed amou insulation, but when used SEPARATELY re a protective covering which makes it h costly. Closed cell foam has good insu per inch, but is incompressable, thu uncomfortable and bulky to pack. Thus become typical to see most backpacks wi large bed rolls: the sleeping bag separate heavy and bulky foam pad rol fact most pads are too thin for sleepi snow, so winter campers have had to car pad rolls). By building the pad into th STEPHENSON eliminated the problems of cover weight and cost. This made it pra to use the most comfortable, least lightest weight polyether foam, & gav PACKAGE the same size or smaller tha other sleeping bags alone.

But, imagine how much smaller & l it would be if you could magically su yourself a few inches above the ground, then insulate that space with ultra WARMFLUFF! In 1974 STEPHENSON accomp that bit of magic: a light but tough air mat to float and cuddle you, filled freely lofted WARMFLUFF Goose Down! RESU COMPLETE sleeping system in just the and space of other Down bags alone, yet more comfort and warmth than any other.

Was STEPHENSON satisfied with tha

TOTALLY SUPERIOR CONSTRUCTION

If we're making the best design, it only logical to make it with the best materials & construction methods. We thus utilized materials and methods used SAIL and PARACHUTE construction to a the highest possible durability & streng weight ratio.

All fabric, including the unseen baffles, is highest tenacity and most t woven Nylon known. This basic fabric, has worked flawlessly in our bags since has now been made even stronger & softe

All porus fabric parts are indivi hot cut, forming a smooth fused edge cannot ravel. This only adds about $10 t cost of a bag, yet we know of only 2 companies (both also very small) that b with this most essential part of making that STAY together

All seams are closely stitched with NYLON thread, the softest yet most abr resistant, strongest thread available. Y never find any weak, stiff, rough poly or cotton thread in a STEPHENSON bag (n lumpy "tuck" seams to coverup uncomfortable and weak thread, so widely today. It seems that coverups are popular than quality and honesty). It is that Nylon is much more difficult t with, but that is OUR problem, not yours parachute, sail, and shoe makers can m to sew with nylon thread, why not make mountaineering gear? If you want it to and be comfortable, be sure it is 100% with nylon!

ZIPPERS

Zippers are all the most durable, operating, snag resistant ones available YKK #5 Ziplon is used on sides. Altho he and much stronger than needed, it is the lightest separating zipper with pull

nside and outside for easiest operation. er more snag resistant #4 is used on the where it's single tab on outside matches tion needs. The even better #3 used on tents is not yet available in long nting lengths. YKK is working on that ve will switch to them when available. ny request #3 at any time, and if we've them and it's feasible to use them on rder we will do so. Otherwise we will s.

's interesting to note that no zipper ets less loads or fewer operations than leeping bags, yet most others use rously heavy #7 or #10, simply on basis LONG zippers are BIG zippers and BIG rs must have BIG teeth (the better to up lightweight fabric), then to up' that error they put heavy, stiff ag strips along the zippers! Meanwhile, pant flys get the biggest loads and perations, and that is where the #3 is successfully used - durable and snag

INDIVIDUALLY HOT CUT & SEWN

ARMLITE TRIPLE bags are CUSTOM made to order, YOUR size, YOU color, YOUR ns. If YOU are big, we make it big, to th comfort. If YOU are small, we make all, compact, lightweight. No longer do ve to suffer in a "standard size" bag loesn't fit and isn't a color YOU like. ach WARMLITE TRIPLE is individually hot o exact size and options selected by the ner. It is then completely sewn by one skilled person. When she is satisfied a work of art she is proud of, she sews wn personal name label on it. (fewer out of 25 who try to sew for us can the high standards for precision that we re. YOU pay them very well for such high ty work when you buy the bag, but it's worth it to have something that will together indefinitely!

HAND FILLED with WARMFLUFF

ARMFLUFF, the highest loft most durable Down we can get, is then precisely hand ed into each compartment using a special g scale for each bag to ensure exact m loft thru out the bag. (no automatic eed inaccurate blower system is used. systems may be OK for the mass ction of most other bags that don't need te filling. Most of them compensate for fill errors and irregular Down quality sing 'slant' baffles with their large ratio and Down shift problems, relying user to redistribute the Down at each nd to lie still so the Down won't shift dly during the night. If they advertize t' baffles you can be sure it's a p for irregular fill and poor Down!)

ES

ou won't find any unstable slant baffles STEPHENSON bag! Slant baffles allow a 4 to 1 variation of Down tube volume, llowing lots of room for the Down to Only if you're filling with Down that drastically in fill capacity, using tic filling equipment that causes lar fill, and displaying bags hung ally, do you "need" the large space ion of slant baffles and the overlap to artially filled tubes.

MIC DIFFERENTIAL, CONTOURED DIRECT N BAFFLES

get optimum insulation and comfort hese top quailty materials the bag is for minimum heat loss area & voids, th freedom to move without causing cold Dynamic differential cut avoids the or heat loss area and big internal of most full differential cut bags by ing only the amount of differential , in the right areas, to match tic motions in the bag. This thus the cold spots and constrictions of flat cut found in cheap bags, without the excess weight & bulk of full differential cut found in most quality bags.

Direct tension baffles, individually contoured and precisely fitted, assure precise, uniform loft and keep the dynamic differential exactly as designed.This takes longer and costs a bit more than other methods, but is worth it for assured quality.

Note that for any differential cut to work where a zipper is used,it is essential that both inside and outside surface be securely closed by double zippers. You can be sure that if only one zipper is used with flap to coverup the defect, that you'll have a cold spot just like in a flat cut bag . Also, for Dynamic differential to work it is essential that the bag be held in one position, fastened to it's pad so it can't roll over (which also keeps you from rolling off the pad, and prevents exposing a thin, crushed bottom side).

EXTENDED SPACE FOOT DESIGN

After testing many foot end designs it became obvious that the simplest is by far the best, like on your bed at home. A round foot end is only 78% as wide as a flat foot end. By sewing the end flat the maximum foot spread is allowed with minimum surface area, thus having minimum weight and maximum warmth, and also REDUCING construction cost! (altho many of the design features and materials we use are more expensive, they are all selected on the basis of usefulness and performance, never simply because it costs more, which is the governments way of doing things.)

MINIMUM WEIGHT and bulk

At first glance the TOTAL WARMLITE TRIPLE bag SYSTEM may appear a bit heavier than some thinner lightweight bags ALONE. But, if you compare TOTAL sleeping SYSTEMS, including bag, pad, covers, on basis of similar warmth and comfort you'll always find the STEPHENSON TRIPLE comes out lighter and with less packed bulk. (altho it is not possible to find any other single bag to match a complete TRIPLE in warmth, you can compare the use of each top separately with many other bags, and can compare the use of two other bags, one inside the other, similar to the way the military did in 1943, to approach the warmth of a full TRIPLE). Of course, there is no way to include in such comparisons the many extra features like built in pad, vapor barrier, collar, hood, and quickly adjustable insulation thickness that allow you to relax & SLEEP in a WARMLITE TRIPLE as you would in a bed at home.

The TRIPLE with foam bottom is lighter & more compact than any other make , and is the simplest system to use. But, you can save 8 oz. more, and almost half the bulk by using the TRIPLE with DAM (Down filled Air Mat).

CAUTION: When selecting a backpack beware of those that claim enough space to put everything inside, and provide no way to put anything outside the pack. Typical sleeping bags take 1400 cu. in., pads about 900, tents 800 to 1600, a total of about 3900 cu. in. which is normally carried in it's own sacks OUTSIDE of the pack. Typical medium size 3200 cu. in. packs have been adequate for carrying other gear. Thus a pack without provisions for outside carry has to have about 7000 cu. in., more than any I know of.

REASONABLE COST

The purchase price of a STEPHENSON WARMLITE TRIPLE is high, altho not as high as many other sleeping bags alone, and far less than the cost of buying the three bags and pad to approach the versatality OF A TRIPLE BAG.

STEPHENSON has cut costs to a minimum by minimizing overhead. Our shop is built under our house, thus eliminating separate land costs, greatly reducing construction & maintenance costs, totally eliminating transportation costs & fuel consumption in getting to & from work, & making us available to answer phone enquiries and meet customers at any time. The wood stove that heats our shop also heats our house, so no expensive automatic oil, gas, or electric system is needed at home and shop to maintain each while we're at the other!

All our seamstresses work in their homes, getting the same benifits that we do (and for those with children, they eliminate the costs and problems of getting babysitters while at work).

We do not maintain an expensive, fancy display room, prefering to show items right in our work areas. We have no high cost, high pressure salesmen, and we limit advertizing to the barest minimum needed to help people looking for us to find us. We rely on word of mouth advertizing from our satisfied customers followed up with the most informative catalog we can write. (As you may have guessed, one of my pet peeves is catalogs that give you no real product information on which to base an intelligent choice, relying instead on fancy layouts, beautiful pictures and emotional catchwords).

SUMMARY

From the above you can see there's no significant difference between a STEPHENSON WARMLITE TRIPLE bag and most other bags EXCEPT for the DESIGN, FABRIC, CONSTRUCTION, DOWN QUALITY, VAPOR BARRIER, BUILT IN PAD, DAM, MULTIPLE TOPS, DYNAMIC DIFFERENTIAL CUT, DIRECT TENSION CONTOUR BAFFLES, COLLAR, HOOD FUNCTION, CUSTOM SIZING, ZIPPERS and COLOR CHOICE. Much of what is written above has been presented in more detail in previous catalogs, articles, instruction sheets and other notes. To avoid repeated typesetting, and hopefully to avoid leaving out anything, we are presenting those in the following sections, starting with notes written to customers to answer specific questions.

" our 1000 mi PCT hike was completed in 50 days. Everywhere we went people were impressed by your tent & bag".

"I'm very pleased with the Triple bag I had from you 2 years ago. The pack & No Sweat shirt are excellent. It's great to have LUXURY in camping."

" your pack makes all others seem like torture racks. It's truly a joy to walk with this pack."

" the poncho is working very well-friends say I look like a silver angel flying down the road"

• • • **Warmlite Triple Bag** — Dollar for down, the Warmlite Triple Bag is as unique and versatile a sleeping bag as can be had. It has an integral foam bottom, a multi-layer down top, a down filled collar, a double zipper draft flap and an optional down filled air mattress.

An 800-mile walk through Maine, New Hampshire, Vermont and New York State, as well as extensive winter camping in Maine and New Hampshire gave us a thorough testing of the Warmlite triple bag.

The Warmlite Triple is so named because it offers a choice of three different insulation thicknesses. In cold weather (to 5 degrees F.) the thick top is used; in warm weather (38 degrees F.) the thin top is used; and in sub zero weather the thin top is used over the thick top. Hence the name Triple.

We found during our four-state walk that the integral foam pad made the Warmlite bag the most comfortable sleeping bag we have used. It was almost like carrying a lightweight bed on our backs. The foam is two inches thick and while bulky (12"x22" stuff sack for 5'9" ht. 60" hip girth) it saves weight and money since it eliminates the weight and cost of down underneath you. Jack Stephenson, the head of Warmlite, feels there is no need for down underneath a sleeper because the down is crushed and provides no insulation. An integral foam pad would be awkward on a form fitting mummy bag since it would prevent the bag from moving with the sleeper, but Warmlite bags are roomy enough for the sleeper to turn inside the bag, so the foam pad is an attribute, not a deficiency.

The foam bottom and thick down top both have double zipper draft flaps on each of their sides. When using the thick top in warm weather, the inner zipper can be left open, making the bag a bit cooler since more air must now be warmed up. When the temperature drops, both zippers are closed, increasing the differential cut and making the bag a bit warmer. In sub zero cold, the two inner zippers of the thick top are used, and the thin top is zipped to the two outer zippers, over the thick top. Using both tops we've slept comfortably outside at 38 degrees below zero (F). The hood closes with a drawstring at the top and an over-the-shoulder inner zipper on the thick top. This is a bit awkward at first and takes a little getting used to. It is easiest to operate if you slide down into the bag and zip it up over your shoulder. An integral down collar makes the hood unnecessary in all but the nose freezingest cold.

Each top has a corresponding foot zipper on the foam pad, for cooling of the southern extremities. When the bag isn't being used, both tops can be unzipped from the foam pad and then zipped together, forming a down comforter.

Neither down top breathes. Both are coated with an aluminized vapor barrier that reflects body heat back to the sleeper. An understanding of vapor barrier insulation is needed to appreciate why this is an advantage. First of all, the sleeper will not drown in his sweat. Sweat glands continuously give off unseen water vapor to keep the skin comfortably moist. Water evaporates fastest in low humidity air, and as it evaporates, it robs heat from the skin. Thus in cold dry air, water evaporates from the skin, taking body heat with it. On a cold night the skin will evaporate water vapor at a rate of 600 grams per square meter per 24 hours. This water vapor passes from the body, through the insulation and on a cold night some of it will eventually condense as frost on the outside of the fabric. As the night progresses the condensation extends into the down closest to the outside shell. At this point condensation is occurring inside the insulation itself (entirely from internal moisture sources). Even if you have the world's dryest tent or igloo your sleeping bag will be wet for the moisture is coming from you the sleeper. If a blizzard is raging, snow or sleet is falling or other poor drying conditions exist as is common in winter then the down in your sleeping bag can become saturated after just a few nights sleeping, and fail to insulate. But since evaporation slows as the humidity level next to the skin increases, the solution is to raise the humidity level in the air next to the skin. A vapor barrier does just that. A vapor barrier blocks moisture evaporation raising the humidity to a more comfortable level, enough to then reduce evaporative heat loss to a minimum.

Using the Triple bag we slept warm and dry; our insulation stayed dry and clean, and we were far less thirsty then friends using breathable bags. This was an advantage because we didn't have to melt as much water as they did. Also the vapor barrier insulation allowed us to place a waterproof plastic sheet over the bag. Now we were protected from both internal and external (dripping snow caves, condensation in tents) water sources. If a waterproof covering is placed over a breathable bag all the body vapor passing through the insulation would be trapped in the down, saturating it. In theory it would be possible to waterproof the outside of the VB bag, but this would be impractical since no air could then pe pushed out of thee bag when it is rolled up and slipped inside the stuff sack.

Larry Amkrant

Reprinted from Wild Country, Jan '78

SSSS- STEPHENSON SUPER SILVER SLEEPER (should be a ZZZZ)

Absolutely the most exotic, most complete, and most EXPENSIVE sleeping bag available in the world. (If you can find a more expensive one we will gladly raise our price to match, since none can come near matching our features or quality.)

The SSSS is basically a STEPHENSON TRIPLE bag with the following extra features:

1. FIVE tops; 3 Down filled tops ranging from 2/3 thickness of standard thin top to 1 1/3 times as thick as standard thick top, giving finer temperature gradations, SEVEN different thicknesses (an incredible 8.5" maximum, equivalent to 17" loft!) and ability to match most conditions, even winter -35° with a single top, thus reducing weight carried by 10 oz., PLUS single sheet top for warm conditions and, net top for the tropics!

2. Down filled Air Mat and carry case pump.

3. All SILVER WATERPROOF exterior. You can FLOAT in the SSSS, as shown in the picture, keeping DRY and WARMer than that Duck!

4. Sewn only by our finest seamstress, to assure absolute perfection, then autographed by and certified by the seamstress, airmat producer, and designer Jack Stephenson.

5. Choice of Zipper sizes for minimum weight or maximum life.

6. Optional top colors; each top can be a different color, waterproof or porus. Waterproof colors are silver, light blue, green, yellow, or brown. Porus colors are red, green, medium blue, or orange.

8. Optional zip in liner on bottom. Cotton or fabric of your choice.

"I used the Warmlite bag in many conditions from summer VA to WYO winter & was completely astounded by it's performance."

Dear Jack;

I've had about 300 nights in the Tripl Bag and I'd like about 3,000 more.

I still can't get over that Expedition ten of yours. All those reinforcements, 1.9 o ends, three super strong poles and th damn thing weighs only 5 lbs. 12 oz. Hel that's lighter than most summer tents.

The Presidential Range is a good testin ground for the Expedition. The Big Bli zard of '78 was its baptism with me and worked perfectly. Really great sitting i that bombproof shelter in such wild con ditions, while Boston and all Massachusetts got totally snowed in! I fe that tent will sell incredibly fast once th public knows about it.

The one thing puzzling about the whol backpacking industry, is why they wait s long before copying your designs. I mean for so many years they put out carbon A frame copies and it took them into the mi seventies before they started copying Lord, pretty soon you won't be able to g into the back country without tripping ove some company's copy of your 2R or 3R - but none of them do justice to the design c come near your weight or strength.

Larry Amkrant

TOP THICKNESSES

The nominal effective thickness Warmlite bag tops are as follows: (Lo equivalence, to compare with other bag is just double the thickness of the to (Space between tops adds effect of .2" combinations).

Triple Bag:	**Standard**
Thin Top	1.8"
Thick Top	3.6"
Combined	5.4"
Single Bag	3.6"
SSSS—	
Net Top—Zero (for tropics)	
Single Sheet	.2" effective
Thin Top	1.2"
Medium Top	2.4"
Thick Top	4.8"
Combinations	3.8". 6.2, 7.4, 8.8

SSSS 60" girth weights (one bag)	
BOTTOM with DOWN AIR MAT	2# 13
plus THIN TOP	3# 8
with med THICK TOP	4# 2
with extra THICK TOP	4# 11
with THIN & med THICK TOPS	4# 13
with NET TOP	3# 4
with SINGLE SHEET (W.P.cover)	3# 0
with NET plus COTTON liner bottom	3# 7

Note that THICK top was slightly thinner th standard TRIPLE THICK top.

EXTRA CARRY SACK

The carry sack we supply for bo bottom bags is a convenient size, similar what is used for most synthetic fill ba alone. The sack for air mat bottom bags smaller, and is also used as a pump f inflating the air mat. If packed bulk is problem for you we suggest that you order extra carry sack, in the 12" dia. size (fo bottom size), and carry your bag in i carrying the pump sack inside just for use a pump. Note that if the extra sack ordered with the bag it costs less than ordered separately as a replacement sac During 1980 we will also accept orders that $5 price for the 12" dia. sack fr previous purchasers of WARMLITE bags. Colo available are RED, BLUE, GREEN, and a f YELLOW. By using the larger sack you wi cut packing pressure almost in half, and th greatly extent the life of the Down, and al make it easyer to get in and out of the sac

PATRIOTIC SUNBATH *Myron Rosenberg*

OUTDOOR HOT TUB Myron Rosenberg

WITH STEPHENSON GEAR WE CAN BEAR EVERYTHING NATURE GIVES US

ENERGY SAVING

We have made great progress on completing this home. We have all the insulation finished: 14" fiberglass in outer walls and roof, 3.5" in all inner walls and floors for zone control, fire blocking, and sound control, insulated triple door entrys (one on inside of enclosed entryway), and EIGHT layers of glazing spaced 3/4" apart in windows. The glazing is SIX layers of 1 mil MYLAR with protective layer of glass on each side, giving effective insulation thickness of 5.5". During winter of '78 -'79 we heated with one VERMONT DOWNDRAFTER on all the time (8 hour burn) and a SHANENDOAH barrel stove in basement when it got below 15 deg. Also, we run a very nice antique MAJESTIC cook stove in the living room on colder nights. During that period we had 4 layers of glazing in most windows and numerous gaps in other insulation. Heating between 7500 and 10000 sq. ft. we burned 8 cords of wood (all cut merely for access and clearing for the garden). This year we have THREE VERMONT DOWNDRAFTERS and the MAJESTIC, mostly have used 1 or 2 at about 12 to 16 hour burn rate, and at this time (1-6-80) have barely touched the 9 cords of wood we have in. The Diesel generator stands ready to heat us with waste heat, and we are still working (slowly) on making the solar collectors (640 sq. ft.), but at this heat loss rate, who really needs them?? But, we'll do it anyhow.

Some where in this book you'll find a thermographic picture of the front of this house. This was taken by PETER BLIVEN of UTI in Sunnyvale, Ca. UTI makes a really fantastic thermographic "camera" which must be seen to be appreciated. This picture has a temperature resolution of .5 deg C, and apparently they can get even finer resolution!! Outside temp. was 31 deg F. and inside temp. was mostly 72 deg. F. The upper walls speckled with blue were 8" thick. The lowest white spot was a single thermopane door (now with 5 layers of MYLAR over it). The bright spot above it, & on the left opposite it, and at the peak are 6X12" Fir beams, which obviously are tremendous heat conductors compared to 14" of fiberglass! The relatively bright area in the middle below the peak is 8 layer windows directly in front of the Majestic stove, which was as hot as we ever get it, just to see what effect it would have. It is 5ft. inside the window.

What I think we have proven so far is that INSULATION to SAVE the heat you have is FAR more valuable than any exotic 'new' energy source. The cost of insulation in this house was about what it would cost to heat it with oil for 1 1/2 years if it was insulated "normally"!!!

"We found a spot & set up my tent with wind blowing across it. We left our 50# packs outside. The wind reached such amazing speeds it blew our packs 5' into some boulders, but your tent endured!"

"We went to Pt. Reyes & it was extremely windy. Tents were blowing down all over. We noticed ONE that did not, & when we inquired about it found it was a WARMLITE tent. The people were very satisfied with it!"

"I also want to thank you for taking the time to answer my questions. Personal service, in this time of multi-nationals, is something to be treasured. Again, my thanks."

" and your Golite pack was GREAT (first time I've EVER been comfortable with a pack). My Kelty used to eat holes in my hips & numb my legs".

"I don't pretend to understand physics or your write up on the No Sweat Shirt, but I used it for 3 years & liked it, so now want another --"

CLEAR MYLAR WINDOW GLAZING

Clear Mylar is as clear as glass, strong and durable, easy to apply, yet only a fraction of the cost of glass.

When oil cost $.15/gal and glass cost $1.50/sq.ft., the practical economic limit on number of layers of glass to use in a window for insulation was 3. Even then, most people only used 2 because of the difficulty of adding more layers and still maintaining the dual function of both light and ventilation thru the window. We now know that windows when placed for a view and light, are generally in the wrong place for best ventilation, so it is best to get rid of the view ruining bug screening and put in many insulation layers of glazing. This will also seal off the many air leaks arround opening windows. Then, put EFFECTIVE vent(s) as high as possible in the house, with well insulated covers and tight seals.

If you use fixed glass for the insulating layers, the economical limit is 4 or 5 layers. 5 layers only gives the effect of 2 1/2" of insulation, which is pretty low compared to the 8" in walls and 12" overhead that you should have.

If you use MYLAR though, the cost is so low that only available space will limit the number of layers you should use. On existing windows you can add layers at first by simply taping MYLAR to the frames with double stick tape, thus creating an insulating air gap the thickness the glass is set into the frame. Typically this is 3/4" on the inner side and 1/2" on the outer side of wood sashes. Additional layers can be put on storm windows, thus allowing up to 4 additional layers without affecting the opening status of the window. Beyond that, layers of MYLAR can be taped to any part of the window frame that will form a 1/2" or wider air gap from other layers. Or, a separate frame, of 3/4" X 3/4" wood, which will just go into the window inside trim, can be made and covered with MYLAR on both sides. No matter how you do it, you should also tightly seal all inside edges with clear packaging tape, to stop drafts and to keep humidity out of the space between layers, so your view will not be blocked with condensation (frost).

PREPARATION: Prepare any surface you will tape to by thorough scouring to remove all dirt, grease, and loose paint. While you are at it you should clean the windows. Allow it to dry. Apply double stick tape to the frame face, generally on the edge closest to the opening, which will allow you to later tape over the outer edge of the MYLAR with clear packaging tape for a more permanent bond. Cut the MYLAR a couple of inches oversize for ease of handling. Removing the backing from the TOP strip of tape, gently stretch the top edge of MYLAR piece to remove wrinkles, and stick down. Pat down gently at first, then rub it down hard. Next remove backing on BOTTOM strip of tape, about 6" at a time, GENTLY stretch the MYLAR smooth and stick in place. Do not stretch much, or you'll put wrinkles in it. Then do the same on sides. You will find it much easier if the tape on top and bottom do not extend past the inner edges of side tape, and if you start removing about 1" of backing on side tape, folding the backing out to sides, before applying the MYLAR. Again, when doing side do not stretch more than just barely enough to smooth the MYLAR. Trim excess back to the tape, and for best protection, tape over the edge with clear packaging tape.

Use clear packaging tape to seal off drafts around windows, doors you are not using, and over electrical outlets. When sealing the outside of windows, leave an unsealed spot 6" to 12" long at the top to let humidity escape and prevent frosting.

The only problem with MYLAR has to get it. Dupont only sells it o rolls (161 lbs.), and no one seems wi market the good 1 mil. MYLAR i quantities for the average home. To many windows in our house with 6 l MYLAR between the 2 layers of gl purchased a full roll from Dupont then we have been selling it to frie giving it to all our relatives, barely made a dent in the roll. others a chance to make similar sa are going to sell it in 150 ft. ro $30/roll (54" wide), which is 4.44 c sq. ft.! We will also sell the doubl tape in 125 yd. rolls for $5.50 per r clear packaging tape, 2" wide X 55 for $3.00 per roll. Due to package s UPS shipping cost for 10 lbs.

For those interested in greenhouses or solar collectors, th MYLAR is excellent for inner glazing but will only last a couple of years to direct sun. For the outer layer we mil MYLAR that has a UV filter dye which makes it last over 15 years in and protects anything behind it damage (thus inner layers of regula should also last as long). At $.50/s is a lot more expensive, but still cost of glass and a lot stronger! I wide.

REVERSALS: WORDS, PHRASES, LOGIC

All of us are familiar with many e of reversals of the meaning of wor phrases, shortening of phrases to th descriptive word, and complete reverse Many of them are humorous, some acci others tragic (remember, the wor disaster ever was caused by a simple misunderstanding). Most slang is general acceptance of a word or phr mean the opposite of what it actuall Various professions develop simplifyi them) buzz words, whose meaning seld any connection with the real meaning word. Items with long descriptive na shortened to the LEAST descriptive p the name (ex. flexible magnetic c recording disk, is called a F Politicians and advertizers delight use of words and phrases that SOUND go noble, yet actually mean nothing at a most of the public delight in hearin nonsense, which keeps them from ha think or make real decisions!

I believe a book full of com reversals, and their real meanings w both educational and humorous. T started on such a collection I everyone to send us as many examples a can, as often as they can. When we ge enough collection maybe we can get s to write the book! I think it should with the nicest, most innocent one of a FLUTTER BY a BUTTERFLY. Probably t entry will be HONEST.

"Generally when a company requests for a catalog they are tossed into the "recycle box". But your firm is so not and what I've seen of your products so interesting, that you'll get my money"

" the combination of your tent & b FANTASTIC. I sleep better in the mtns. do at home. Keep up the good work."

"I LOVE MY NEW TENT! The first wee I'd wake up just to exclaim to my frie nice it is! It is everything I could w light, warm, roomy, breezy (with drop down) easy to put up & take down, reall stable in a storm....you know all that, should I say more? My sleeping bag too just perfect - the double layer idea i and SO COMFORTABLE."


PERHAPS THE INNER, NEVER LOST RAPPORT WE HOLD
WITH THE EARTH, LIGHT, AIR, TREES, ETC. IS NOT TO
BE REALIZED THROUGH EYES AND MIND ONLY, BUT
THROUGH THE WHOLE CORPOREAL BODY. . . PERFECT
SANE, TILL NAKEDNESS IN NATURE!
. . . THERE ARE MOODS WHEN THESE CLOTHES OF OURS
ARE NOT ONLY TOO IRKSOME TO WEAR, BUT ARE
THEMSELVES INDECENT. PERHAPS INDEED HE OR
SHE TO WHOM THE FREE EXHILIRATING ECSTASY OF
NAKEDNESS IN NATURE HAS NEVER BEEN ELIGIBLE,
HAS NOT REALLY KNOWN WHAT PURITY IS — NOR
WHAT FAITH OR ART OF HEALTH REALLY IS.
Walt Whitman

Goretex is an interesting material that
the unusual property of being mostly
erproof (when clean) yet having some
osity to air flow. This is somewhat
llar to Urethane coated fabrics, except
t the porosity in Goretex is due to much
ger physical holes in the film, which
uids CAN flow thru when wetted, while the
es in Urethane coatings are of molecular
e, and thus ONLY let gases thru, altho at
wer rate. The presence of dirt, soap,
, or detergent on a good Urethane coating
not affect waterproofness like they do
Goretex.

Gore has published interesting data that
porosity, or the "breathability" of
tex is 5 or 6 times that of Urethane
ed fabric, or about 1/3 that of uncoated
ics. Their tests show that for active
ng the porosity will let out about 1/5 of
sweat caused by overheat, for what they
ider a typical condition. The obvious
tion then is "what happens to the other
of the sweat?" The answer is simple: you
ILATE by opening the jacket at top and
om, and/or remove the excess clothing
is causing the overheat. Now, if such
ilation can work with a jacket full of
s, think how much better it'll work
out the holes. Ever see anyone poke a
ney full of holes to make it draw better?
ourse not! Then why expect it to work in
cket or tent?

Side by side testing of identical design
ets made with Goretex and with Urethane
ed fabric, showed no difference in
ting. So how do you explain the many
rts of little or no sweating in Goretex
ets from happy customers? Simple: the
way you explain the even larger number
people who have never had any sweating in
hane coated jackets (which includes the
rity of rain jackets, winter and ski
s, and windbreakers sold in all major
ing shops and discount houses). Most
e either never sustain the high activity
needed to get noticeably wet from
eat sweat, and most of those who are
e have the intelligence to remove excess
ing so they don't get overheated, and
don't get wet from sweat, no matter what
outer garment is made from. Promoters
retex and many synthetic insulators have
trying (quite successfully) to convince
public that it is inevitable that you
get wet if you engage in any outdoor
ity. Then they make great, false claims
the superiority of their product in
ting the effects of water, knowing full
that the costomer is not likely to ever
et and discover their falsehoods! It's
the same as if we claimed that our
were guarranteed to keep away Pink
ants, then point to years of customers
our tents and never being attacked by
Elephants as proof!

ll the testing by Gore and others has
y proved that the objective of making
outer fabric was wrong and unnecessary,
that it led to serious problems of leak
terproofness. We understand that Gore
made significant changes in Goretex,
ing pore size to make it much less
tive to the wetting effects of dirts
also making it less porus), so that it
oming closer to matching the excellent
rties of Urethane coated fabrics. The
ion remaining is, why then pay so much
for it if it offers no advantages, but
may have problems? The only
nation for that is that some people feel
must buy the "latest, most heavily
tized" stuff to feel that they are
y "with" the up to date crowd.
n a jacket, Goretex is little worse than
materials, and thus acceptable. But,
tent, Goretex can be a disaster. It's
porosity will interfere with proper venting,
promoting intimate contact of humidity in the
air with the cold tent wall, thus
guarranteeing condensation. Up to a point
the thick, porus Goretex will hold all that
condensation (where it is difficult and slow
to dry out in the morning). Once enough
condensation has occured, the fabric is
sealed, and the tent is then left without
ventilation if it relied solely on porosity
of the fabric (as all Goretex tents I know of
are now made). It is interesting that they
expect you to believe that the inside
humidity can be carried out by condensing on
the inner surface, wicking thru the fabric,
and evaporating from the outer surface. This
shows ignorance or deceit, since conditions
that cause condensation almost always include
100% relative humidity outside, with dew
condensing on the outside of the tent. If
water is condensing on the outside as well as
the inside, then obviously no water is being
carried away! Also, if water condensed on
inside can wick to the outside, then water on
outside can wick back thru to the inside so
you get wet in rain or dew even without
inside condensation. Users of Goretex tents
tell us that this is apparently what happens!
Again the question is, Why use it when it has
all those problems, and costs and weighs MORE
than TWO layers of the best coated tent
fabric??

Gore's main business is apparently making
wire insulations, which I'm told are the
best. Their technical expertise is evident
from the way theysolved the very difficult
problems of making Goretex. Now, if they
would only apply that skill to making better
laminates of fabrics and films, we could make
some significant advances in tents, sleeping
bags, and rainwear.

NUCLEAR POWER

The reactions of a few, very vocal,
persons, to Nuclear power have been amazing,
and show the typical reverse logic that is so
popular today. As one bumper sticker so well
put it "More people have died in Ted
Kennedy's car than in Nuclear Power plants".
No industry has ever had such an excellent
safety record or low level of pollution. Yet
it is that safety record that seems to have
people so afraid! With NO deaths, NO damage
or injuries from radiation, you can't come up
with good statistical predictions for an
individual being killed or injured, and
people fear the unknown altho extremely
unlikely danger far more than the well known
and high danger such as riding in an
automobile! All the blind arguments about
"waste" disposal totally ignore the fact that
much of the "waste" is actually extermely
valuable, recoverable materials, and ALL of
the remainder (in fact ALL of the spent fuel
from our current light water reactors) can be
used as fuel for the far more efficient fast
breeder reactors (which other countries are
now building as fast as they can). Some
people look at the staggering cost of a
Nuclear plant and say it is obviously too
much. But they fail to realize that those
plants recover the cost of building in just a
few years of saved fuel costs! Here in N.H.
we even have idiots who say the power
companies shouldn't be allowed to make enough
money on current power sales to be able to
build the new plants needed to keep up with
ever increasing demand! It's about time the
public realized that ALL the capital invested
in ALL production plants, that provide ALL
the goods we enjoy and ALL the jobs we need
had to come from SAVINGS from PAST PROFITS on
PAST SALES!! Only the Federal government can
spend money it never earned or even
collected, by printing more "legal
counterfit" money, and even that is merely a
way of STEALING the savings others have made
from PAST PROFITS not spent! Profitable
companies continue to create jobs and the
goods for all, making good use of past
investments. Unprofitable companies destroy
jobs, throw away past investments, and tend
to dump a lot of bad merchandise on an
unsuspecting public on their way down. Yet
our Federal government condemns, and heaps
extra taxes on companies that finally become
profitable, while praising and giving
fantastic support to the unprofitable ones!
Seems the Feds can identify better with a
business that operates like they do!

What SHOULD be obvious to all is that
government has NEVER done anything to help
the economy. ALL of the products and services
we need come from private business EVEN when
paid by a government agency! We must STOP
people from crying for government "solutions"
for all problems, get the government off the
backs of the people, and promote a sane
understanding of the value of industry and
profits! Energy shortage will ONLY be solved
by individuals conserving and changing to
renewable energy sources.

RECOMMENDATIONS:

GREGORY MTN PRODUCTS, 4620 Alvarado Canyon Rd, San Diego, CA 92120: 714-2844050. Wayne & Suzy do EXCELLENT WASHING and REPAIR of DOWN products & all backpack gear. They also make some super INTERNAL FRAME PACKS.

CHUCK ROAST EQUIPMENT, 19 Odell Hill Rd, Conway NH 03818: 603-4475492. Chuck makes great FIBERPILE JACKETS, DAYPACKS, GAITERS.

BECK OUTDOOR PRODUCTS, 4025 State St, Santa Barbara, CA 93110: Bruce makes the best SNOWSHOE BINDINGS & CRAMPON STRAPS.

PETER LIMMER & SONS, Intervale, NH Worlds finest CUSTOM FITTED BOOTS

MOSS TENTS, TENT WORKS, CAMDEN ME. Outstanding cabin size, family size, and small tents. Bill designed the original POP tent and has been years ahead of others with wind stable arc top tents.

SHERPA SNOWSHOE CO, 2222 Diversey Pkwy, Chicago, IL 60647 Producers of the finest snowshoes, much copied but never equaled. Unique binding CLAW gives the traction of crampons.

Great Pacific Iron Works, Box 150, Ventura, CA 93001 Chouinard equipment, Patagonia pile

THE DOWN DEPOT, 431 belvedeer St, S.F.CA94117 Professional cleaning of Down bags, garments

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Publications of Interest

SUMMIT, PO Box 1889, Big Bear Lake, CA92315
25 years of fantastic mountain reporting.

CLIMBING, Box E, Aspen, CO 81611

OFF BELAY, 15630 SE 124, Renton, WA 98055

OUTSIDE, Box 2690, Boulder, CO, 80322
A MUST for anyone interested in any outdoor activity or travel.

SIGNPOST, 16812 W 36, Lynwood, WA 98036
Excellent trail condition guide.

APPALACHIA, 5 JOY St, Boston, MA 02108

Backpacker, Ziff Davis, NY, NY 10016
This merger of WILDERNESS CAMPING and the old Backpacker may finally be successful. We wish them luck.

Western Backcountry, Box Q, Quincy, CA 95971

SKI CAMPING by RON Watters Solstice Press

PLEASURE PACKING by Robert Wood new edition

GUIDE SERVICES we've had great reports on:

BACKPACKING with BARROW, SHIRLEY BARROW, Box 183, Whitefish MT 59937

Brad Bradley's Northwest Alpine Guide Service, Box 80345 Seattle WA 98108 A unique family operation in the Cascades & Olympics

Wind over Mountain, Box 1380, Telluride, CO 81435

3R on McKinley

Model 3

First 2-Man Tent 1961

3R and 5R on McKinley 10,000' Near Kahiltna Pass

STEPHENSON WARMLITE TENTS

Need a tent for MOUNTAINEE BACKPACKING, BYCYCLE CAMPING, CANOE CAM SKI CAMPING, from the ARTIC to TROPICS?

Stephenson tents have been proven in 15 years of the above uses. Although basic, engineered design has changed little over those years, there have been little improvements in details, mate and options to satisfy customer req assuring you of the finest that experience coupled with modern technolog provide.

Unlike all other makers of mountaine tents, we cannot describe our tents as just introduced, revolutionary shape, because we have been making them, and p have been using them with great success over the world for over 15 years! Now others have finally noticed the am performance of our WARMLITE tents they rushing to make tents that look like which we feel is a nice compli Unfortunately though, they havn't attention to the actual engineering desi materials that have been so important fo success. Instead they have merely ap the old troublesome methods that c problems in their now rejected old designs, or worse yet, made them out of heavily advertized material that is to unsuited for tents. Thus the revoluti tents that we thought would follow our has instead become a babble of confu The many look alikes, instead of lighter, drier, more secure, and easi set up than the old, are heavier, confusing to set up, and bad in a storm. frequency with which I get calls, aski our tents have the many problems they with some other look alike is appallin must warn you then to READ the foll descriptions of our tents: NOTICE al significant details of design and mate that are DIFFERENT than other tents, f is those differences that make such fant differences in performance.

What follows is a simplified listi the main features of WARMLITE tents, in typical of most advertizers. This sor thing has been repeatedly asked for by p wanting an easy to read catalog.

For full description of these featur and of materials construction details th have made these tents the most durable, resistant tents available, refer to the following pages, 28-38.

STEPHENSON WARMLITE TENTS

STEPHENSON'S WARMLITE tents were marily designed, and proven in years of all over the world, for severe weather ntaineering and expeditions, where remes of wind, rain and snow are most anding. The design for maximum wind bility and very simple setup also results minimum weight and packed size, thus also ng it ideal for all packpacking, canoe, cle, and airplane camping. The licity of setup (two simple poles slip in eves, 3 or 4 stakes to support it), will eal to those who have been frustrated by spider web of lines and many poles and tments on most other tents.

UNIQUE FEATURES

MOST STABLE, wind resistant ELLIPTICAL RC shape for low loads and quietness.
MOST ROOM per person; room for gear, ressing, cooking. Easily accommodates xtra person in emergency.
DRIEST, INTEGRAL DOUBLE WALL for bsolute rain protection, minimum ondensation. No separate fly to fight ith in storms.
QUICKEST, EASIEST SETUP, only 2 RESHAPED poles, 3 or 4 stakes
STRONGEST POLES, preformed and stiff, aintain shape and stability in highest inds.
EASIEST, QUICKEST ENTRY, keeps out bugs, ain, or snow but lets you enter or leave sing 1 freeze proof zipper.
MOST ADJUSTABLE VENT SYSTEM for full ontrol of warmth & humidity
LIGHTEST WEIGHT. Less weight per person han any except WARMLITE X tents. Even ighter than simple bivy sacks.
WIDEST RANGE of OPTIONS to match any onditions.
THREE SIZES for all uses. 2, 3, 5 erson sizes.
YOUR CHOICE of COLOR, yellow, light ue, medium green, with option of uminum center top.
TWO DOORS on 3 and 5 sizes, quick entry rom either end.
INSIDE TENSION ADJUSTMENTS to always sure a tight stable tent without having leave your warm snug bed.

WARMLITE tents, THE standard of cellence for the worst weather use, are so the simplest and lightest for all ckpacking, canoe, bicycle, or airplane mping.

TENT OPTIONS

1. S = LARGE 54" X 30" side windows for hot weather cooling and wide view from tent.

2. D = Drop away front for stargazing on cold nights from the comfort of your warm sleeping bag. Note this is NOT a door and is NOT a vent. Adds 4 oz. to standard tent, 7 oz. to endlined tents.

The DROP FRONT is NOT a vent, window, or door, and thus there is NOT netting over it to obstruct the night sky view or greatly increase weight. If you want windows for a view out in bad or buggy weather, or for cooling in hot weather, order SIDE WINDOWS.

3. E = Endliners. Extends double walls down over ends to increase warmth and prevent frosting on ends. Adds 5 oz. to size 2 tent, 7.5 oz. to size 3, 12 oz. to size 5 tent.

4. COLOR can be yellow, light blue, or forest green. ALUMINIZED TOP, or mixed colors, available for extra cost. Expect additional production delay of several weeks.

5. MIDPOLE for size 3 or 5 to prevent side deflection in very strong side winds. Adds 8 oz. for size 3, 12 oz. for size 5 tent. Not needed for strength, nor recommended in heavy snow.

6. ULTRA LIGHT single wall X version for weight less than typical bivy sacks with full space and storm protection of the R tents. Not near as resistant to condensation as the R tents, so require care to minimize humidity added to the tent. 2X weighs only 1 lb./person, 3X only 7/8 lb./person! Colors Aluminum, Bronze, Yellow, Green, all as material availability allows.

7. ERV Extra Rugged Version, individually cut and sewn ONLY by GEORGE, to ensure the highest possible precision and durability. It includes options of ALUMINUM top or MIXED COLORS, E ENDLINER, MIDPOLE, plus Extra reinforcing and tie out points on poles for use in side winds over 120 mph. Most of the original special features of the early ERV tents, such as extra end reinforcing, two doors on 3 and 5 sizes, inside tension adjusters, liner hanger, multiple net pockets on each side of each door, and sleeve for midpole, have been made standard on all WARMLITE tents now. Thus the main reason to order an ERV is to get the perfection of George's construction and individual cutting. The options of E and Midpole can be left off, for a corresponding price and weight reduction. S and D options can likewise be added. Be prepared to wait 2 to 3 months for an ERV. Plan ahead!

"Recently I borrowed one of your older tents & LOVED it"

5R 3R 2R

Warmlite 2 RS Billee

3R AFTER THE FEB. '78 BLIZZARD

Inside 5
Laura, Bev, George, Joan, Eric, Bill

Model 2D

Drop Front Half Open

Releasing Top Buckles

Drop Front As a Cave

Drop Top , Folded Open

CODE FOR OPTIONS AND COLOR

R=Double wall top, Aluminized inner
X = Single wall, lightest weight
S = Side windows for view and cooling
D = Drop front for stargazing
E = End liners, double wall ends
Y = Yellow, light inside, easy to see
B = Blue, very light inside, pleasant
G = Green, a bit darker, blends well
A = Aluminum top between poles
ERV = Extra Rugged Version

Typical tent listings: 3RSY, 2RSDB, 3ERV , 2RG, 3RSEYA, 2XY, 3XS Si, 3XSDG. X tent lors have been Yellow, Green, Silver, Gold, d White (translucent, no pigment). Due to oblems with getting more Mylam produced we not expect to have the special colors of ld and white available after present stock gone. Then X tent colors will be the same R tents, with a STRONG suggestion that you der Aluminum for lowest radiant heat loss. be sure, telephone before ordering and eck material stock.

TENT WEIGHTS

The following tent weights are for MPLETE tent, poles and sack. We do not pply the 3 or 4 stakes you'll need, and nce their weight can vary greatly according expected soil, they're not included.

2X = 2 lb.	2R = 2 lb. 15 oz.
3X = 2 lb. 12 oz.	3R = 3 lb. 15 oz.
5X = 4 lb. 12 oz.	5R = 5 lb. 12 oz.

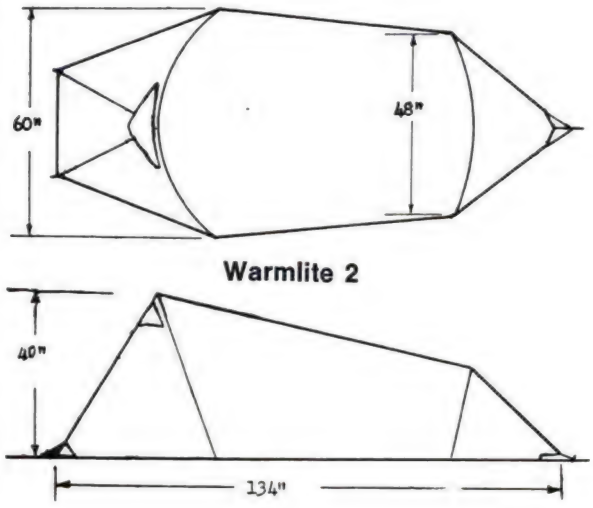
Options add following weights:
= 5 oz. D= 4 oz. (6 oz. on size 5)
= 6 oz./ 2R 8 oz./ 3R 12 oz./ 5R
If D is added along with E, there will be ditional weight increase of 3 oz. on sizes 3, 4 oz. on size 5.

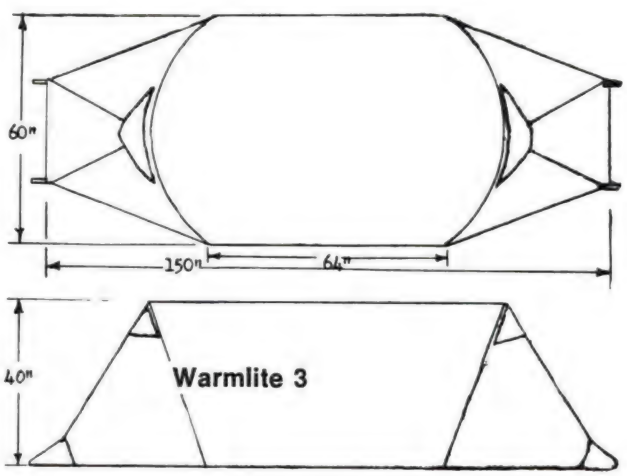
Extra light poles can be ordered, at tra cost, for sizes 2 & 3 tents, to reduce ght 4 oz. per pole. Since those poles are ost as flexible as the poles being used in y copies of our tents, we cannot recommend em for use in high winds. Warmlite tents e always supplied with the standard poles, l the extra light poles are sold only as an tra set for mild weather use.

Weights can vary from the nominal listed, nly due to variations of coating. We ecify the minimum coating weight that gives iable waterproofness. If it is lighter it leak, so we reject it. If it is heavier, will last longer, so, up to a point we l accept it.

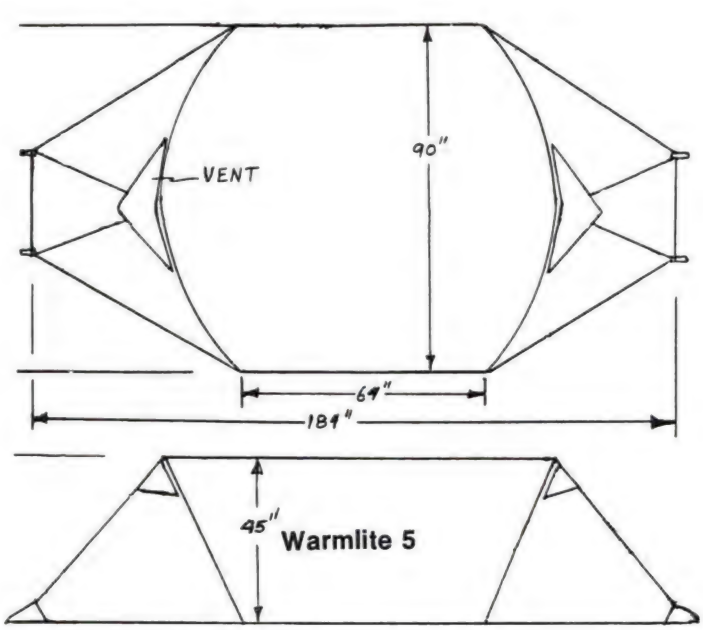
The drawings show exterior sizes. erior sizes are about the same for X ts, but APPEAR smaller on R tents due to pe of the liner, altho actual sitting and ing space is the same (you can easily push light weight liner aside).

SIZE: The erected tent sizes are shown in the drawings and illustrated in the photos. There is enough height and width to permit 2 persons to sit side by side across the width. Model 2 tents will comfortably sleep 2 adults with their gear, or 2 adults and a child. Model 3 will be roomy for 3 or snug with 4 adults. Rolled sizes with poles are 15" long by 5" diameter for Model 6, and 15" long by 6.5" diameter, for Model 3. Poles take half of the volume, and could be carried separately for more compact packages. Model 5 tents are comfortable for 5 to 6 adults, and pack 15" by 8" dia.





THE OUTSTANDING MOUNTAINEERING TENTS



EASY CANOEING

Warmlite 2 Joan Stephenson

Top Vent Open

Top Vent Zipped Closed

WARMLITE 3ERV ALASKA

Side Windows Open, Warmlite RS

CAMP ON ALBANY RIVER

Slumber Party in Number 5

TENT FEATURES, MORE DETAILS

An elliptical arc cross section has owest wind loads and most stable air thus eliminating stress and noise of ng fabric so common in other tents. eliminates need for many staked out and the stress concentration points cause. Conical ends provide lowest drag uniform load distribution from the to the tent.

The FULL width at floor is useable for ng bags. Two people can sit side by easier than in an A tent twice the . WARMLITE 2R and 2X tents have more than any other 2 man tents, and are used for 2 adults and a child. The 3R 3X tents are lighter than other 2 man yet have more useful room than other 3 ents, and can actually fit 4. The 5R, at eight of most 2 man tents, can sleep up and makes a great community tent for groups. Since there are no lines to out it takes no more space to set up ost 2 or 3 man tents. Storage space for and equipment is provided in conical Large net POCKETS on each side of each lets you safely and visibly store small

Double waterproof walls (integral fly) fully sealed seams minimize chances of The insulating air gap between walls, ilver exterior of inner wall, keep the or warmer, thus reducing condensation minimum. Differential height venting ney effect) is aided by the increased and prevention of condensation. The umid, warmer inside air rises up and he top vents, being replaced by drier de air through the lower vents. Zippered on vents allow full control, which is ally important when wind is strong.

NER or INNER WALL: The inner wall is of a special aluminum coated Nylon, d tightly to ends & floor, spaced 1" to side of the outer wall to form an ating dead air layer. The aluminum e faces out so it's low emmisivity y reduces radiant heat loss, keeping ner much warmer, and thus normally dew point. The coating acts as a vapor r to keep inside humidity away from the outer wall, and thus minimize nsation. Humidity added inside the tent us vented out thru the vents with um contact with the cold walls. (Note he coating is still not a perfect vapor r, and also some humidity can get n walls during setup, so it is possible a little condensation on outer wall, is a small fraction of what would occur er tents with porus inner walls).

e conical ends can be single wall, or double wall by selecting END LINER . Vent flow in the tent results in ontact with end walls, so normally the t of condensation that will form is no m, and thus most customers have been with the lighter weight with no end . But, if you expect to use it a lot ry humid, cold rain conditions, where off ends is more bother than you want, long winter trips where frost removal be annoying, then order END LINERS. We nd liners with either white (undyed) or matching end of tent, to let in more

l of the fabric is a recently improved on of the high strength 1.2 oz. ripstop that we have used without failure in sleeping bags since 1958 and tents since It has a special polymer coating that plied without air polluting solvents, s even more durable than the Urethane gs previously used. A clear coating dyed fabric is used for colored parts, an aluminized coating on undyed fabric is used for the liner (or for top if aluminum top is ordered), for minimum radiant heat loss. End liners are normally made of undyed, clearcoated Nylon to let more light in, or same color as end is used.

The same Nylon, in brown with heavier coat is used on floors. We have never had to replace a floor, or even a major portion of one, proving the durability and correctness of this choice. Coatings will wear off on ANY tent floor, and can be quickly and easily recoated. We have found that coatings wear off much faster on heavier, stiffer floor fabrics.

"BATHTUB FLOOR": The floor is fully sealed all arround up to a height of 4" above the ground, thus assuring that NO water can enter at ground level. The floor coating is very waterproof and durable but, like most coatings, not a good vapor barrier. We recommend that a polyethylene sheet be placed under ANY tent to keep groung humudity out of the tent and thus eliminate condensation under pads and packs.

SEAM SEALING: It is essential that all seams on outside of a tent be fully sealed. We supply full instructions, a brush, and an adhesive coating-seam sealant that bonds intimately with the fabric coating to form a continuous seal across all seams. The extra sealant is used for touch up, and to permanently bond on patches if damage occurs. Sealing can be done in 1/2 hr. but typically takes 1 to 1 1/2 hr. (the record reported so far was 32 hrs. for two - some party!!).

4. Set up is simple: Poles, with sections held together with internal joints and elastic cord, slip easily into continuous sleeves sewn into the tent, with reinforced ends and entry slot. Webbing end loops are staked out, and tent is UP! No adjusting, no external lines and stress concentration points, only 3 stakes on 2 man or 4 stakes on 3 or 5 man tents. No bending of willowy straight poles (which wouldn't stand up in wind). No separate fly to fight with or have blow off.

5. Poles are PREFORMED 7001T6 Anodized Aluminum, the highest strength aluminum alloy known, 2 1/2 times as strong as the 6061 alloy commonly used for tent poles and pack frames. By PREFORMING to shape a much stiffer and stronger pole can be used, and ALL the strength is available to resist loads. (Flexible poles start out 1/4 the strength, then use 80% of their strength up just being bent to shape, thus leaving only 1/20 the strength to resist actual loads as is available with our poles!). Joints are slightly stronger than pole sections, and provide 1 1/2 times the overlap required to get a full load transfer and match pole strength. (In comparing tents you may notice some use fiberglass poles, which are double the weight and 1/4 the strength of our poles. You'll also note they use ALUMINUM joints, because fiberglass is too weak. Makes one wonder about their other claims!)
Joints are made with inside sleeves to make a smooth exterior and make it easy to be sure they are fully together, thus eliminating breaks.

Poles are GOLD anodized for corrosion resistance (and also to make them look like what they cost). Joints are blue anodized to make a distinctive contrast with poles so you can see if a joint isn't fully together. Since poles are hoop loaded the tent stands with almost no bending load in the poles except when strong wind or impact loads are recieved. Thus it is possible to use the tent normally even if a pole was broken by some exceptional loading (like someone falling on the tent), with a simple taped repair. THAT cannot be done on tents with straight poles flexed to shape!

6. Quick easy entry is essential to keep bugs from following you into the tent, and to minimize rain and snow entry. Most tents require operation of 3 or 4 zippers to open or close the door. The STEPHENSON door only requires operation of ONE zipper, and the door can be held fully closed during that operation, so door is only open during the time you are actually going thru it. A second, backup safety zipper is also provided, and a cross zipper below door gives a positive seal against crawling insects and small animals, when wanted. Since positive ventilation and view windows are provided separate from the door, the door does not have to be degraded in an attempt to serve multi uses.

7. Top vents have INSIDE zippered covers. Lower vents have simple drop down covers. All vents and windows are covered with the finest netting available (called NOSEEUM net, but the mites known as NOSEEUMS in the south can get thru ANY woven fabric. Use RAID on them!)

8. STEPHENSON tents have always been, and still are THE lightest weight tents available, generally 1/2 to 1/3 the weight of similar size tents. This was achieved thru careful engineering design to minimize loads, matching of all parts to required stiffness and strength, and selection of highest strength materials without cost restriction. Despite achieving the lowest weight (or possibly because of the design effort to do so), we also achieved the highest storm resistance, well proven in 16 years of unsurpassed performance all over the world.

9. See OPTIONS list. Customizing options allow you to select just what features YOU need. No need to carry the weight, or pay the cost of unwanted extras, nor be denied features YOU desire.

10. THREE sizes give YOU the choice of just the capacity YOU need without need to go to an inferior design just to get a different size. In fact, many of our customers have purchased 2 or 3 sizes to be ready for different needs. We recommend a model 3R for most universal use, since it is the ideal size for winter camping for 2 or 3, gives capacity for up to 4 when needed, yet is still lighter than other 2 person tents.

STEPHENSONS WARMLITE tents are now made in three sizes to cover all uses. The model number indicates the intended number of adult size people who can sleep in it (altho frequently we recieve reports of 1 or 2 more fitting in, especially if 1 or more are children). A tent smaller than the 2 would not be practical even for one, since the only dimension change that could be made would be width, and that would distort the shape, decrease stability, and not save much weight. Since the 2 is lighter and more compact than most other one bag bivy sacks or "shelters" you can use the 2 as a one person tent.

2R and 2X tents will sleep two comfortably with room for a couple of packs, or an extra child. Altho all dressing, packing, and cooking can easily be done in the tent, the limitation of full sitting room in front only will make it seem crowded if you have to spend many stormbound winter days in it.

3R and 3X tents comfortably sleep 3 with room for packs, and with full sitting room between poles gives luxurious comfort on stormbound days. Two adults and two children have frequently used the 3 with comfort.

5R and 5X tents will sleep 5 to 7, and gives the absolute least weight and packed bulk per person of any tent or shelter available. The 5 is an excellent community tent for larger group trips, often used along with other 2 and 3 size tents. Altho the 5 is best for a family for minimum weight and cost, you may do better with a 2 and a 3 for privacy, quiet, and easier site selection.

11. *Choice of THREE COLORS PLUS! Most tent makers give you no color choice. STEPHENSON gives you the choice of YELLOW, LIGHT BLUE, or FOREST GREEN, and the added option of an ALUMINUM top with those end colors. YELLOW is most visible in dim light, very bright inside during a sunny day. LIGHT BLUE is very easy on the eyes, adds gentle color to a camp, shows dirt the least, disappears in dim light. FOREST GREEN blends well with bushes an trees, is very easy on the eyes, and only slightly darker inside. GREEN also shows up well on snow, so is ideal for a winter tent. Adding ALUMINUM top (between poles) reduces radiant heat loss or sun heating and damage during the day, and makes an interesting contrast with colored ends, although it negates the hiding ability of green.*

12. A second door allows you to enter or leave thru the downwind door during storms, thus keeping out snow or rain. It also makes it easier to add or remove gear from the tent, and lets extra people enter or leave without crawling over other occupants. The 2 person tent doesn't have a rear door because that end is too low, and 2 people have no trouble using one door without disturbing the other occupant.

13. *Inside tension adjustment allows you to quickly tighten a tent that has loosened due to expansion from wetness or from shifted stakes, without leaving the comfort of your warm snug sleeping bag. This is especially important during a storm. Nylon will expand when it gets wet. A loose tent will not hold steady as designed, but will flap like a flag. Flapping will disturb your sleep, and is very likely to damage the tent or pull out your stakes, all of which will ruin your night! But who wants to leave his warm sack when it's 33 deg. pouring rain and 40 knot wind? Or maybe -30 deg in a howling blizzard? In a WARMLITE you simply reach over, pull the straps thru the buckles, then go back to sleep in a quiet, secure tent.*

There are many different uses for tents, and different features are desirable for those uses. Rather than make compleletely different designs for each use, as is commonly done, we have kept the same well proven basic tent design and structure common for all uses, and offer the special features for special uses as options.

ERV Extra Rugged Version:

This "ULTIMATE STORM" tent is a specially cut and sewn version of our size 2 or 3 tent, that includes the options of ALUMINUM TOP, END LINERS, MID POLE, and choice of mixed colors, PLUS has extra reinforcing at many points, extra tie points on poles, and a zippered cover over lower vent to block extra fine snow. By individually hot cutting each part we assure pattern perfection. Then, GEORGE sews it, fits poles, checks it out, and completely seam seals it, resulting in perfection of shape never before seen in a tent. Altho none of our tents have failed due to wind, the calculated limiting side wind was 95 mph. The extra reinforcing on ERV increases that to 130 mph and with extra tie outs on poles used, 160 mph. Note that it takes much higher winds than those in the upper air to reach those levels at ground level, and only tornados exceed that!

Since George can only make about 40 ERV tents a year, he tends to get backlogged on orders from 8 to 12 weeks, so order well ahead of need. If rushed, remember you can get all the features you NEED in our standard R tents, which WILL work well for you any where.

Standard options of S or D can be added to ERV tents. Also, the unneeded MID POLE option can be eliminated. Merely adjust price by option cost.

SIDE WINDOWS: The SIDE WINDOW option consists of large 54" long by 30" high windows on each side. These provide a panoramic view on each side of the tent, and cooling cross ventilation for hot weather. A view can be enjoyed without excess ventilation by opening only one side and partially raising the zippered inside cover flap on other side. Windows can be fully closed from inside or out. With covers zipped closed the tent is as tight and storm resistant as if the windows were not installed.

DROP FRONT: Ever wish you could lie in your warm bag on a cold night yet still not have to get up to move into your tent when ready for sleep? You can do that with a WARMLITE tent with DROP FRONT option! A long zipper across the front just above the door, and 2 cords with buckles to hold tent top up, allow you to unzip the front and let it fall fully open, leaving the rest of the tent up. Yuo can even release the 2 buckles and fold the rest of the tent down towards the foot end, giving a totally unobstructed view. When ready for sleep, simply pull up tent pole, connect buckles, zip the zipper, and tent is tight against any wind or storm, all done from the comfort of you sleeping bag!

Note that the DROP FRONT is not a door and is not a vent. It is intended for COLD night stargazing (when no bugs are out), so the view is not obstructed by netting (which would also get in the way of the door and greatly increase weight). For warm weather views and cooling ventilation when bugs drive you into the tent early you should have the screened SIDE WINDOWS option.

DOORS: The 2R & 2X tents have one door on large end. All others have two doors, one on each end. The doors are fully independent of the vents and windows, so there is no need to complicate them and slow down entry & exit with net doors. Most times a single vertical zip is all that is needed, thus taking about 1/3 the time to enter, which means 1/3 as many bugs can follow you in as on other tents! For positive seal against crawling insects and animals there is a zipper across bottom of the door where it rests against the netting over lower vent. The inside weather shield under main zipper also has a zipper that can serve as a backup to outer zipper. The lower edge of the door can be lowered to cover the lower vent to block out wind blown dirt or extremely fine snow. (the very fine netting will block out most common snow) Top vents have zippered covers that allow any ammount of closure, providing complete control of ventilation.

Note that, unlike some rather poor immitations of our tents, our door zippers run PARALLEL to lines of stress, so there is negligible load across the zipper. Thus you can enter or leave in the highest wind without fear of damage to the tent, and can zip it closed immediately without having to loosen the tent first.

ZIPPERS: Zippers are selected for the loads they may get and for easiest operation. All inner zippers are YKK #3 polyester coils which are very durable, most snag resistant and easy operating. On the outer door is a YKK #4 DELRIN molded tooth zipper which has most resistance to icing, thus assuring reliable, easy operation in even the worst winter weather.

INSECT PROTECTION: Often the most important function of a tent is to provide protection from insects. For this protection ALL vents are covered with the finest available "no seeum" netting, and the door is designed to permit rapid entry, exit, and closure with one zipper. An additional zipper across bottom of door can be used for more positive seal against crawling insects and animals, while a backup zipper along door edge secondary zipper rain shield and pr in case of outer zipper damage.

Porus liners: In 1974 we tr experiment: Rather than try to frequent questions about porus line people who hadn't bothered to re understand the explainations already catalog, we offered porus liners option. This was intended to forc people to do more reading and thinkin worked far better than ever ex Questions about porus liners vi disappeared, but we actually did ge orders for tents with porus liner unfortunately filled them. The re complaints about heavy condensation an drying times, and STRONG recommendatio we NOT sell any more like that convi to drop that silly option. We did ha customer in the pacific NW who was hap his porus liner, but then, we have a MANY customers in that area who are with our single wall tents. It see condensation is not much of a problem of that area due to the relatively c temperatures and low absolute humidity that is why REI's most popular tents area are such wet disasters in the east.

DO WE HAVE IT IN STOCK ? Most li DO have a few tents that MAY suit your but there is about a 1 in 4 chance t have the EXACT version you first sele you will have to wait your turn to h made, or change order to one in stoc our many options add up to about 318 u different tents. With an annual pro of only about 600 tents you can impossibility of having everything in We do not attempt to stock any ERV or tents, and rarely ones with aluminu If you are in a hurry, then phone t from available stock. Otherwise be p to wait from 6 to 16 weeks (still quicker than Limmers).

The perfec

like the perfect camper, has yet to be Don't be misled by advertizing, expe tent to be as comfortable as an ins heated home! In ALL tents you WILL g noise, you WILL be restricted in spac WILL get condensation at times, you W both less and more ventilation than yo (sometimes at the same time!), and damage it from misuse. Anyone who tel that their tent totally prevents any c problems is not telling you the whole altho often it is ignorance, not dish that leads to such claims. I have hea amazing claims made for our tents, a found that often the enthusiasm is finding performance far BETTER than EX not due to PERFECT performance! Plea that again, carefully. It is IMPROVEMENTS over other tents that nice and lead to such enthusiastic pr of our tents by users. Testamonials A to read. The thousands of nice lett have in our files from enthusiastically customers is what keeps us trying But, when you read advertizing, be a S Was it "bought" with free equipment "expedition"? Was his previous equip bad that anything would have seemed Is the advertizer only showing you t part of an otherwise complaining lette too have included a few of the many we have gotten, but I caution you, do solely because of them! Instead, SE description of design and materials, can make an INTELLIGENT decision b exactly what it is and how well it mee needs. It is YOU and YOUR needs that not someone else's experiences and nee

2X SILVER-FREEFORM CHAIR — 3 R

Wilderness Camping
Feb./Mar. 78
by Editor John Fitzgerald

solutely the Lightest Tent

Now that there is so much lightweight camping equipment, it ems that the universal striving of only a few years ago to go hter and lighter has softened of late. Well, Jack Stephenson asn't monitoring the demise of our lightweight preoccupation d he went on innovating.

Stephenson has never been overly concerned with con- ntional dogma, anyhow. Now he has a roomy Mylar (that's ght—Mylar) tent that weighs 28 oz. in his 2X model and 36 oz. a 3X. It looks like no other tent you've seen. But it is sturdy. ore than sturdy, it's tough. Probably the loudest criticism of ephenson's tents is that they don't **look** boobproof. It turns out at they're as close to bombproof as a tent can be made.

The X tents are single-wall; condensation is controlled by re-and-aft sill vents and ingenious top vents. They're sold as ree season tents—he has other designs for winter camping. he 3X I used last summer and Fall sets up easily in about five inutes. It has worked admirably in temperatures down to the ahrenheit teens. It is unbelievably roomy. One night I even nsidered bringing in my bicycle! It's available in either gold translucent. I've found the latter to be fun. You can dimly see e stars and just lie there watching clouds scud under the oon.

Most of Stephenson's products are so radically different that u either have to accept the scientific justification for their sign or be daring enough to take a chance. In any event, he fers a money-back guarantee. His catalog is interesting ading, with information density, but I find it hard to get raightforward product data from it. If he ever asks, I'm going give him some advice on how to improve it. . .the catalog . at is, not the tents. Nevertheless, you can get your own copy by nding $3.00 to **Stephenson, RFD 4, Box *145*, Gilford, N.H. 03246** RF)

COOKING INSIDE 2R TENT, ALUM. LINER

ENTRANCE AND LOWER VENT, 3ERV

MODEL 2 MODEL 5

No Sweat on McKinley

Model 5, Early 6 Man Expedition Tent
Made 1963, Photo 1970

TENT END LINERS: There has been some misunderstandings about end liner use for condensation control. In most spring, summer and fall camping the amount of condensation that will form on tent ends is not troublesome enough to be worth carrying weight of endliners to avoid it (or worth the extra cost). But for winter camping, extra warmth and stopping of condensation on ends makes end liners worthwhile. We did not want to influence people into buying more than they needed by emphasis on condensation control of end liners, but apparently have convinced some thereby that there would never be condensation on the ends. It is quite normal to find some condensation on single wall portions of any tent (although much less than usual on the X tents). We do not consider that a problem in most conditions sufficient to justify the expense and weight of end liners. If you feel it is worth it to have a drier tent then by all means order tent with end liners. We don't mind the extra income, and prefer you to be happy.

Cookholes: A cookhole is merely a floor opening which can let in dirt and water right where you want floor the cleanest, and will let spilled food get under the tent floor where it can't be cleaned up, thus leaving tent dirty, and sticky and smelly so it will attract bugs and animals. It is safe to place stove directly on tent floor, but, if on snow it is best to put an insulating pad under stove to prevent snow melting and tilting of stove. On our tent, the under door vent makes it very easy to wipe up spills and brush it out of tent without opening the door!! We do NOT put silly cook holes in our tents.

SUN EXPOSURE: Synthetic fabrics used in backpack gear, such as Nylon, Dacron, Polyethylene, and Polypropolene are very quickly degraded by exposure to sunlight (ultraviolet rays). If you must camp in one spot over a day, protect your tent and other synthetic gear by moving it into a shady place, or by covering it with an aluminized tarp, such as our poncho. For long term camping use acrylic or cotton tent, or erect a sun shelter over your tent. When we first tried light fabric on tent floors we expected only short life compared to the tent life, but now we have seen several tents that have died from excessive sun but the floors continue to survive, never needing replacement.

"I've been using the #6 (2R) tent throughout Alaska for years and have been VERY happy withit. It is by far the largest 3# tent I've seen. In one emergengy we slept 4 in it"

"I especially like the way the pack rests on the hips with no shoulder support- easy to put on when heavy "

"Having recieved my training in physiology I'm pleased to see someone is finally applying the correct principles to the construction of mountaineering equipment."

I'm happy to tell you I climbed, with Sherpa Nawang Tensing, the summit of MAKALU, 8475 m. high (28000 ft). Last camp was at 7950 m. & was exposed to heavy storms & extreme cold. We were happy to have your Warmlite 3RESV tent there. We already appreciated it in the extreme winds at camp 3 in the saddle at MAKULA-La. A great unexpected advantage was the silver top which reflected the intense sun at high altitude, so the temp. inside remained agreeable while in other tents we got too hot. We also liked the very good regulated ventilation. This is why we prefered the Warmlite tent to all others: it was super light weight, streamlined shape good for storms, and agreeable for still hot days. It was a real help for our summit success- by & by all 7 climbers got to the top.

Cordially, Kurt Diemberger, dy-leader

In 1979 Kurt, who had already climbed more peaks over 8000 m. than any other, climbed Lhotse and Everest.

" may your new home provide the same warmth & cheer I have experienced in you wonderful tent."

"Your tent works well in the area I w in (Artic, Yukon, Kuskokwim region) with dry cold winters & damp, buggy, cool summ There are other makes & types that work u a few specific conditions, but I have not found any better than yours for year roun 'all season' camping for extended periods time." (fishery biologist)

We do not use orange, since it is a most impractical color fo It is very bright and glaring in good bright sunlight, but is one first colors to disappear, and appear black, as light gets dim. I on snow, where even black would stand out by contrast. Many have been misled into thinking orange was the most visible color, all circumstances, by the results of an airforce study on aircraft study was aimed at finding a color which would aid visibility it was so bright that the anti-collision strobe lights were hard As light gets dim, the strobe lights stand out very well, and c the planes is insignificant. Thus, if you intend to put a strobe li your tent, you can feel secure in making it orange. Otherwise, s yellow. Red or orange trimming, which will appear as black t dim light, can be added to make it stand out better on snow.

TENT DEVELOPMENT

While hiking up into the mountains one day, someone commen how silly it was to climb up while carrying Down on our back should have bags filled with up! — This comment led to seriou cussion and eventual evaluation of a sleeping bag filled only wi using closely spaced layers of fabric or plastic to prevent conv It was found that ¾" air gap would be near optimum, but it require a housing which would not flutter and flap like regular to prevent forced convection. A half cylinder shape was selected it would have best stability in wind from any direction, and gave mum surface area. A 1 man verion was designed and built to my 2 lb. fill down bag. Ice house tests confirmed the accuracy o obtained, with an exact match on insulation, but, it weighed 4½ compared to 2 lb. 14 oz. for the down bag. Obviously something than 1.1 oz. nylon, or more efficient in design was needed. By m it for 2 people, the surface area per person could be reduced, a making end conical, and using magnesium poles, curved and loaded, the basic support structure was made lighter and stronge simpler. Using ¼ mil. mylar for inner layers could get the weigh siderably below that of Down. A prototype of this was built (mo but using very cheap nylon linings. This proved the structural would work, but, also proved that the accuracy required in fitti many inner liners would not be practical to maintain. Also, bond mylar was not practical at that time. Work did continue though, practical design and good mylar bonding was achieved by 1965 sold as our filmgap liner.

Meanwhile, the crude nylon liner was removed from the 2 ma and it was used as a camp tent. Experience in extreme winds re it was far more stable than anticipated, sitting quietly while my c tional flat sided tent beat itself apart. We offered to make tents design for the American Everest Expedition, for material cost since they were getting all supplies donated free, they were not ested.

In 1963 we were asked to produce equipment for the 1964 K ram (Himilayan) Expedition, headed by Graham Stephenson (n lated). We produced all their sleeping bags, down parkas, ove and tents using the new design. We made 6 Model 4 tents (abou longer than Model 6) and 3 Model 5 (about 1 ft. longer than Mo These were of "conventional" 1.9 oz. porus ripstop nylon, fully (double wall) with porus 1.5 oz. nylon, with large, single vents o end. They worked very well, being roomy, light, quick to set u extremely stable and quiet in storm winds. Those same tents hav used on long trips, all over the world, every year since, and are good shape, except for severe fading of the nylon. But, heavy con tion was a problem, as it has been with all porus tents. The porus does made a good sponge to hold the water, but it then transfers when you touch it, and takes a long time to dry out. We tried tent, Model 6, with differential height vents, and found reduce densation. A plastic sheet put over one tent showed that seali fabric would improve venting and make tent drier (much like ging holes in a chimney will improve draft. The result was a te was dry enough to make it practical to eliminate the liner fo tively dry area use, such as the Sierras. Thus, in 1965 we starte duction on Model 6 tents, with options of the standard liner (6 the unlined 6, or a hot weather verion, 6S, with screened side wi In 1967 George joined us on a full time basis producing tents.

About 1965 we exhausted the supply of magnesium tubing, so looking for improvements. Materials evaluated were higher st magnesium, stainless steel, titanium, fiberglass graphite-epoxy

er strength alum. I found the high strength aluminum 7001-T6, g used for arrows, could make the lightest, strongest pole. Despite g very expensive due to many drawing and annealing steps re- ed, this appeared to be the most practical material to assure maxi- reliability and minimum weight. Other materials are being regu- evaluated (such as newer graphite-epoxy, boron fiber-aluminum, ium, and even grown saphire, which has fantastic properties, but ot be grown in a curve, and would cost about $20 *per inch*), but can presently match the 7001T6 aluminum.

n 1969, due to demand for a larger tent, the Model 7 was produced. 970, an even large, Model 8 was produced, and aluminized reflec- fabric was introduced for liners and tent tops. A new urethane- ne coating was developed to give greatly improved tear strength better fabric sealing (later this was widely adopted by other tent ers, using various names, such as "polymer coatings" to distinguish om earlier stiffer urethane coatings which had low tear strength to stiffness and tight bonding of fibers). In 1972 we found a l, high quality fabric coating plant, which could supply better, more istent coatings on fabrics, and was willing to try other materials. is led to the development of excellent vapor barrier coatings for ing bags and clothing). They developed lighter, more flexible, r emissivity aluminum coatings for tent and bag linings, and the ial white coating for desert tents. The improved quality and re- d weight and cost of the aluminized coating led to making alumi- d liners standard on all of our tents in 1974.

During 1972 a customer requested some way of dropping the tent, inside, so he could look out at the stars when he didn't need the yet erect it instantly from inside his sleeping bag. The previous ght models were complicated, only practical on single top tents, and one looking thru mosquito net. We thus developed the drop front, drop top, whichever you wish to call it), which has been enthus- cally received. (About ⅓ of tents sold in 1973 had that option).

n 1973 zippers were put on vent covers and side window covers, for e positive snow seal, since most tents seemed to be used as much in er, and snow storms, as in summer. The success in surviving winter zards and mountain storms, without the constant digging out of r tents, has earned the Warmlite tent a reputation for being *the* er or expedition tent.

NDENSATION IN TENTS

One of the minor problems in tents, yet apparently major concern of buyers, is condensation. Basically, condensation will occur on any ace which is colder than the dew point of the air next to it. (ie, temperature at which the moisture in the air is all the air can hold, 00% relative humidity). Thus, unless you see fog forming around tent, condensation will only occur when the tent is colder than air around it.

There are 3 ways the tent can get colder than surrounding air: adiation of heat to colder surroundings (the cause of clear weather ensation) ; 2. Conduction to cold rain falling on the tent. 3. Addi- of heat and moisture inside the tent, from drying wet clothes, ing, breathing and sweating. A tent wall at outside air tempera- can then be below the dew point of the inside air.

f condensation is on the outside, we call it dew, and ignore it no it takes as long to dry that off as inside condensation). If the is porus and wicks the condensation into the weave, most people re it, even claiming it doesn't exist, altho that is harder to dry out surface water on a coated fabric. If it forms on inside of a single tent, and is shaken off by impact of rain drops on outside, some n the tent is free of condensation, but leaks! Some people can look few drops of condensation on one end of a tent and get all upset, ning the tent is a total failure (but they don't trade in their house ar when similar fogging occurs on windows or bathroom walls). rs will look at a tent top covered with very heavy condensation, h hasn't quite gotten heavy enough to drip, and say the tent is ect, since it kept them dry, and will insist others are nuts to carry uble wall tent just to avoid such minor condensation! — Thus, ensation is not only very variable, depending greatly on camping itions, but also a highly subjective subject, depending greatly on ttitudes, experience, and expectations of the observer.

There are several known ways to reduce condensation, which are tical for application to mountaineering tents. Ventilation is often dered the most important, but is not often very intelligently done, can only help reduce that part of condensation caused by moisture d inside the tent. If you will observe how often everything outside is red with dew in the morning you'll realize how often it is possible to condensation even when no one is in the tent, and ventilation can make that worse. In any case, for ventilation to be effective, it must de a means for getting inside air to move out and replacement de air to move in (and should not rely on wind, which is generally nt under heavy condensation conditions), and it *must minimize* act of the moist inside air with the cold tent wall. Relying on flow the fabric (porus fabric) only guarantees maximum contact and imum condensation, altho admittedly the porus fabric can *hold* a f condensation, but once thoroughly wet it is sealed with water, thus no longer porus.

Most tent manufacturers have to rely on porus fabric and wind to ide ventilation, which works when there is wind, if you don't d the chilling effect of wind blowing thru the tent. But, most nights windless, and when the wind does blow it is nice to be able to rol the ventilation to just what you need. Fortunately water vapor is light (about .6 the average weight of air), and warm air is lighter than cold, so the warmer moist air inside an occupied tent will tend to rise. By simply putting a large vent at top of tent to allow the rising inside air to escape, and putting inlet vents at bottom of the tent to allow drier outside air to enter, we provide good ventilation which does not rely on wind at all. Covers on these vents are then used to limit excess wind driven ventilation, and thus prevent unwanted chilling or snow entry.

There are several things you can do to reduce moisture added to the air inside the tent and thus minimize condensation, in *any* tent.

1. Use a vapor barrier lining in your sleeping bag, which also keeps you warmer and prevents dehydration.

2. Avoid spreading wet clothes about — minimize trips in and out n rainy weather; fold poncho as you enter so wet side is folded in; wear vapor barrier clothes to avoid sweat soaking your clothes.

3. When cooking, keep pots covered as much as possible (saves fuel too). Operate your stove a couple of minutes after removing last pot to warm tent and carry out excess moisture.

A double wall can reduce condensation or at least ,on some tents, hide it from view. There are two ways a double wall can act to reduce condensation: 1. The insulative air gap between layers, and radiant heat shielding by outer wall, both serve to keep inner wall warmer, and thus reduce or prevent condensation *on inner* wall. 2. A sealed inner wall will block flow of air to outside wall, and thus reduce condensation on outer wall. The usually used urethane coating lets some vapor diffuse thru allowing some condensation on outer wall. A saran coating will virtually stop all vapor diffusion. By blocking vapor at the inner surface, total condensation is reduced, inside humidity is held higher (thus keeping you warmer), and the condensation which does form is on inside surface, where you can see it and sponge it off. Of course, if you do not wipe visible condensation off with a rag or sponge you're likely to wipe it off with your head and clothes, which can be most annoying. One thus has to choose between a sealed inner wall with visible, removable, less total condensation or a porus inner wall, with slower morning drying but all condensation out of sight, and hopefully out of contact with occupants. Our personal experience, and the reports of most of our customers, has supported the use of a sealed inner wall. But, we have gotten enough comments from others, who would prefer the porus inner wall, that we have decided to offer that as an option. You can thus order our tent either with the standard aluminized coated inner wall, or with water repellent but porus 2 oz. ripstop on inner wall. Weight and cost are identical (This 2 oz. nylon costs much less, but, in our way of construction requires individual hot cutting of parts, which eliminates cost savings).

There are various names used for the walls of double wall tents, which tend to imply different things, and thus confuse people. The different names are mostly derived thru development, not any direct intention to mislead. If we look back at tent development and camping habits, we find early tents made of heavy cotton, which could be made fairly water repellant, and being very thick and absorbent, could easily hold all condensation unnoticed. When lighter weight cotton and nylon tents were developed, they were not rain proof. A simple solution was to place the dining fly (a simple tarp used to shelter the camp table from rain or sun) over the tent to break the force of the rain. Another solution was to make tents of rubber or vinyl coated fabric. Since these were merely copies of the previous heavy canvas tents, no provisions were made for ventilation or condensation control, and frequently condensation would rain on the occupants. In typical human illogic and unscientific guess work, some people assumed the coating was the direct cause of condensation, failing completely to note that the major difference was that the heavy porus tent absorbed the condensation that previously occurred, so they were unaware of it, despite the hours they spent drying their tents! These two "solutions" were combined in later tents, the basic "tent" (ie, inner wall) being made of porus fabric, with a second tent, the *fly*, made of coated rainproof fabric, errected above it. The errection of two tents, with separate tie outs, was difficult and time consuming, and the exposed, open sides of the fly made it vulnerable to winds, and thus it was generally left home on windy mountaineering trips. But, the single wall light nylon tents with poor vents did not have enough porosity, or thickness, to absorb all the condensation which would occur, and tents got rapidly coated, and sealed, with ice. A "solution" to this problem was a second wall, an absorbent *liner,* hung *inside* the tent, (thus avoiding all the problems of outside erecting and wind) which provided an insulating layer of air and a second absorbing surface. This worked fairly well, but required excessively long drying time, or carrying a lot of water or ice. Also, when there was insufficient drying time, as would occur with long storms, the accumulated condensation would exceed the absorption capacity of the liner. Most backpacking and mountaineering trips are scheduled with very little time allowed for drying gear, thus the most common complaint about a porus tent and liner is the excessive weight when packed wet or frozen.

We avoided the separate "fly" problem by building it in, as an integral part of the tent (a feature which is appearing in more tents every year.) But, when a "fly" is built in, or intimately fitted to the "tent", which is the tent, fly, or liner? A double wall tent could "correctly" be called a tent with liner, or a tent with fly, but the function is the same, no matter what you call it. Most others, making tents with coated outer wall and porus inner wall, have chosen to capitalize on the bias against coated tents by calling it a porus tent with coated fly.

We have considered the basic storm shelter, the outer wall, to be the tent, and have thus called the inner wall a liner, causing some confusion with the old absorptive liners. When we made some tents without inner walls, we differentiated between those by adding the letter L to model designation for the double wall, or liner models, and R to that if the liner was aluminized.

Radiant heat loss can only be reduced by reducing the emissivity of the fabric. This is accomplished by aluminizing the coating with aluminum pigment. Porus fabric can also be aluminized by vapor depositing in a vacuum (as done on our sleeping bag fabrics), but that is not durable enough to last on a tent. All the inner walls of our tents have an aluminized coating (except when a translucent coating is requested for end walls). The outer wall can also be aluminized to make the tent slightly warmer on clear nights, or to make it cooler in the sun. An aluminized exterior will have little effect on condensation when the standard sealed inner wall is used, but will greatly reduce condensation on outer wall when a porus inner wall is used. Generally, when aluminum outer top is ordered, we make the end cones in the color selected, since an all aluminum tent would be too dark.

Condensation on tent floors has been quite puzzling. Tests with polyethylene vapor barrier sheet placed under the floor have shown that most condensation on floor comes from vapor in the ground, or snow, under the tent. A most puzzling occurrence is to find water under your foam pad, and no where else, even with a waterproof pad, or with vapor barrier over the pad. Apparently vapor in the ground will rise, pass thru the urethane coating on floor, concentrate and condense on top of this floor. If you have a porus pad with urethane coated nylon cover on bottom side, the condensation will most likely occur on the inside of bottom covering, especially if top covering is porus and allows excess water vapor from you to get into the pad. Unfortunately you will not see the water inside the pad covering, so will likely pack a heavy wet pad unknowingly. To prevent these proglems, on damp ground or snow put a polyethylene sheet *under* your tent and *over* your foam pad if it presently has a porus top.

X TENTS - CAUTION ADVISED

We and many customers have used our X tents in ALL sorts of conditions, including heavy rain in humid weather, and stayed completely dry. BUT a few, who apparently do not take all precautions to minimize humidity getting into the tent, have said they got VERY wet from condensation in humid heavy rain. Thus we must caution you: If you are a careful, thoughtful camper who will take all precautions to keep your gear dry and minimize humidity added to your tent, then you may find the X tent is ideal for your spring, summer and fall camping. All others should buy the R tent. (Even an R tent, misused, can get an annoying amount of condensation, but much less than any other tent!)

We have found that many people are camping on trips with their airplanes. A larger number of those attending air shows, especially antique and home built shows, will set up camp alongside their plane, which is much cheaper and more convenient than going to a motel, and allows them to enjoy the air show and parties with fellow flyers to the fullest, while protecting their aircraft. We've also noticed many people using their airplanes for vacation trips, especially now with fuel shortages and high fuel prices, due to the much better fuel economy the airplane gives them, greatly increased speed, avoidance of traffic, and accessibility to places which are difficult or impossible to reach by other means. The main problem with airplane camping is bulk and weight of equipment, which can best be solved by using our light weight back pack tents and sleeping bags.

On winter flights, or flights over wilderness areas, it is most reassuring to have a good tent and warm sleeping bag with you in case of emergency, or simply as a way to make a quick overnight stop with no time lost getting to or from motels. We found that especially nice on our property locating trip to New Hampshire this January.

CAMPING: There are nice public campsites nearby at Gunstock. We allow some limited camping here by our pond for those who prefer natural camping. We also have an island campsite (a very private 5 acre spot), and can provide sailing, and flying sightseeing trips of the local area and the White Mtns. Phone for costs and reservations.

PONCHOS

For hiking in the rain it is hard to a PONCHO or umbrella. Both allow exce ventilating so you won't get wetter from own sweat from overheat than if you wo rain gear, and, both can cover your pack don't make umbrellas, so won't concentra them, but you really should give se thought to a good umbrella for most hiki rain.

Most ponchos suffer from several def High wind can wet your legs, but simple pants or chaps can cure that. Most let run down your face, which is most anno We have cured that with a simple visor o hood made of clear vinyl so you can se thru it. The hoods tend to shift ar your head as you walk, slowly cutting vision on one side and, when you turn head the hood doesn't turn with it, so find yourself trying to look THRU the (this also tends to happen on many jackets, unless the hood drawcord is p up tight, and then you get overheated lack of ventilation). STEPHENSON cured those problems with a hood tie cord fastens to INside of hood at about the so hood can be firmly tied to your head still be wide open for full ventilatio further improve venting we inserted an V of fabric below the neck. Thus, inste being a big sealed sweat dome as ponchos are, the STEPHENSON poncho pro ventilation like a chimney, keeping you and dry. If it does get cold, you can s close the velcro neck closure, shut venting, and warm up.

Most ponchos are made 72" to 86" and a few more expensive ones offer an o of 100" long so it can cover your backp All of our ponchos are 100" long. I happen to be very short, you can trim excess length off with sissors. Since coated fabric it will not ravel, an unhemmed edge will not whip as much i wind.

Quite often we are asked about how our poncho will fit a gi person, with or without a pack. Generally, we cannot answer becau we don't have enough sizing information. You can quite eas determine how the poncho will fit. It is 48" in front, 52" in ba 54" wide. Measure out a 100" cord and put a knot 48" from one e Drape 48" part in front, 52" in back, knot at shoulder.

FREEFORM: The one thing I've never gotten used to w camping is the lack of comfortable seats. Now, STEPH WHEELER has come up with a great solution to that problem 1 lb. sling chair. It is very comfortable, in fact more so t most padded chairs, yet it is light and folds flat, only 16" x 26" is expensive at $29.95, but it's a lot more comfortable than sitt on $29.95. Write to Stephen at 1539 Monrovia Av. No. 23, Newp Beach, Ca. 92663.

Camping in Gilford: We live on a 49 acre hillside, mostly wooded, w natural pond. Plenty of space for friends to camp on their way through the W Mountains, or just visiting us. In winter skiing is great just 5 minutes aw Gunstock, and we can accommodate quite a few friends at a time — just your favorite wine for relaxing in the hot tub.

DESERT CAMPING BY AIRPLANE — 1947 STINSON

AIRPLANE CAMPING, OSHKOSH 1977

FREEFORM SLING CHAIRS — 1 LB.

Poncho, Neck Vent Open

Customer Comments

My congratulations on your fantastic design. It is the first tent I have ever had that I have been happy with and I lived in tents for eighteen months. I especially like the attention to small details, such as the glasses pocket, the string thru the poles, which is a great help for putting it up in pitch dark. Thanks much,

C. B. Donhill.

Allow me to congratulate you on such a natural and beautiful way of displaying camping equipment — after all, isn't this the basic reason we all love to camp — "to get away from it all" and enjoy the beauties of nature. Sincerely,

Gene Gradel.

I bought a tent from you last summer. In a severe winter storm over New Years on the San Francisco Peaks Arizona, your #6 tent saved my life. The tent came out ripped because it was stuffed with six people when the other tents blew apart. I'm convinced. Please send me another catalogue. Sincerely,

Mason Skiff.

I'm convinced that anyone who knocks all hip-carry packs doesn't know what he's talking about. He's never carried a well-adjusted Warmlite. All best wishes,

Aaron Shearer.

This is a happiness letter about our 6LR tent. It's withstood several tests, including a night in a super snow blizzard spent in a cemetery inside the Syracuse city limits. (All the roads out of town were closed.) In howling wind we recorded an inside temperature of 28° while it was 8° outside. We secured the front of the tent by excavating the snow down to the frozen earth and screwing in two ice screws. The back line was supported by a horizontal cross-country ski behind two grave stones, one "Mother" and the other "Father." (Yes, it's really true!) On top of all that — literally — huge loads of snow were dumped on top of the tent all night long from a tall tree we'd camped under. The tent? Just like new!

Jim Prior.

I want to thank you for an excellent product. I purchased a Warmlite triple bag this past summer, for use above timberline in the Sierras, and its performance far surpassed that of any other bag I've ever seen. While my friends spent uncomfortable nights, fully clothed in their traditional down bags, I passed the sub-freezing nights comfortably undressed in my unzipped triple. I was even able to lend one layer of my bag to my friends. The trip was terrific — discomfort is clearly not a prerequisite to enioying the wilderness. Sincerely,

John Friedlander.

The sleeping bags and tent are truly beautiful and indeed, everything your catalog says is true. And I do not hesitate to say that you have given better service than any other camping supply distributor we have done business with. FAR OUT. Without a doubt . . . Sincerely,

Mike & Mary.

"For almost 3 years now we've delighted in the security of your Warmlite tent, and never yet managed to write you a letter of thanks. Belated, but none the less grateful. . . . If you know Tar Toskeroy Books, you'll take satisfaction in knowing we've christened our tent 'Bagdad.'"

P. L. & P. C.

Altho your claims for your tent sound at first somewhat extravagant, after living in it for a month in the Sierras I have to admit that they are entirely justified. It came thru rain, snow, and high winds completely dry." . . .

W. T.

"Thanks for tent — above and beyond greatest expectations. No condensation problem ever on humid B.C. coast with temp. around freezing."

C. E.

"I didn't really understand, or believe, your reasons for waterproof interior on the bag when I ordered it, but now, after a season's use in all temperatures I'm really sold! I've never been so warm and DRY in a sleeping bag, and I don't wake up thirsty in the morn or the night!"

S.W.

Just under a year ago, I purchased a two-man insulated tent from you and used it last summer while bicycling to Nova Scotia. I must say that I am very pleased with it. It's ability to be set up in nearly every location imaginable, its design providing for ease of setting up, great stability and spaciousness once set up, and especially its lightness and compactness when packed make it, in my opinion, the best tent on the market for bicyclists. J.S.A.

"Incidentally, I think you might want to know that my Model 6 tent literally save one member of a climbing party from hypothermia. We were caught in a storm in a fairly exposed area and were taking wind gusts of 70 m.p.h. With a temperature in the high teens it was COLD to be outside. My friend's typical A-frame tent blew down, leaving him cold and exposed. There were three in mine the rest of the night, and reasonably comfortable at that. Even though the wind shifted 90° and we took it in the sides, we managed to survive. I compliment you again — this time on the strength of the tent — and my friend thanks you." Sincerely,

Richard F. Scott.

"Incidentally, I think you might want to know that my model literally saved one member of a climbing party from hypothermi were caught in a storm in a fairly exposed area and were taking gusts of 70 m.p.h. with a temperature in the high teens. It was to be outside. My friend's typical A-frame tent blew down, leavin cold and exposed. There were three in mine the rest of the nigh reasonably comfortable at that. Even though the wind shifte degrees and we took it in the sides, we managed to survive. I co ment you again — this time on the strength of the tent — an friend thanks you." R.F.S.

For three years, I have taken your Model 6 through ever from Switzerland's snow t othe jungle and sabana of Venezuela. carried your whole family with me in that tent and I love yo out.

My mother has been so impressed by the extreme durabilit comfort of my tent, that she wants one of her own. Thanks,

David Barnes.

I have been living in the tent for the last 6 weeks and it has excellent. The tent has been through some intense storms, both and rain and kept me warm, dry and unworried. Indeed, in the of a particularly severe thunderstorm a clap of thunder was fol by a terrible shaking within the tent. For a moment I thought w been hit, but rather it was a friend's terrified German Sheppard, a hundred pounds, who had jumped on the tent. It shook, but it up and when we got the dog off it was fine. Some tent!" M.S.

I have been using your Model 6L tent as a habitation almost uously since I received it in October. It has been through almost kind of New York Adirondak miserable weather and has kept only sane but quite happy and comfortable. I am extremely pleas I bought it and consider it the wiseest investment that I made. you,

Fad Turner.

"My wife and I are both very happy with our Warmlite triple after using them from late winter to hottest summer. The built-i is an excellent concept — it makes the bag sleep like the bed back on the first night out. I no longer toss the first night or two till I g sleeping habits straightened out." L.D.

"I purchased both your Warmlite bag and your Warmlite t am so impressed with these quality items that I am now at my urging, purchasing a Warmlite Bag for my wife. J. N.

"The pack trip went off without a hitch and your prod really a beautiful bag. It is the most comfortable sl bag I have ever made the effort to climb into. I guess be getting a smaller size bag for my wife, if I don't liable to appropriate mine." F.B.T.

"It is the only tent I've been sure that I wanted to o years of backpacking. It lay on the beach (wrong en the wind!) like a dignified sea lion, while 25-odd style tents, flapped, ripped and collapsed! I feel that it will do as well above timber line in the Sier M.

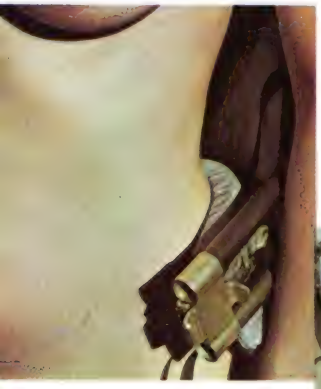
"I used the tent almost every day for the last two mon The tent was excellent. It weathered strong winds with 3 stakes and it went up in minutes, I received many co ments on it from European campers." E.I.

"Ahh, but your tent is magnifident. It really does exc my already high expectations. It is always a pleasure me to see something that is really good, and to exper it is even more thrilling. It is an understatement on part to say that I--as well as the many friends who ha seen the tent-- are very pleased." R.F.S.

Last May we bought a tent from you (and a parka too) and went off to Afric where we slept (3 of us) comfortable and protected from such sundry things as: freezing cold and rain at Thompson's Falls, 100° weather and 50 mph+ winds w/dust at Lake Rudolph, damp bug laden country at Nakuru, incredible rains on Mt Meru, tropical rains and blowing sand at Mombasa....and all through this nothing ever bothered your tent. Plus that it charmed every person we met...all the slick campers of the world are out there looking good and travelling cheap but there we were in your super tent setting it before anyone else etc etc...you must get a lot of these letters.

Measuring Front Girth

Golite Pack on McKinley



Hip Band,
pport Arm and Buckle

Pack Hip Band Unit

Golite Pack Colors

Golite Pack Loaded

NEW HAMPSHIRE FALL

Small Golite Pack, Billee

STEPHENSON GOLITE PACK

The GOLITE pack is the LIGHTEST weight yet STRONGEST pack available today. It also has the most comfortable carry system, which is suitable only for people who are not a lot overweight and who have some hip showing. Fat people, and guys with long straight narrow hips will not find any advantage in a hip carry!

The high strength frame is almost completely shielded by the sack (see pictures) so it is much like internal frame packs, providing a close stable carry and resistance to snagging on bushes. But, unlike internal frames which are heavy yet can't support heavy loads, the GOLITE frame is STRONGER and LIGHTER than any other frame AND is the quickest and easiest to remove (which is nice for airline carry). No need to compromize comfort and load capability for smooth exterior or airline carry, when you can have the best of both in a GOLITE pack!

Features: 1. True hip carry systems (3 point suspension, no front belt or pressure on backbone), rapidly adjustable to any position. This hip carry is far more comfortable, and gives far better pack control, than any other type of carry. The 3 point suspension system used allows flexibility over the hip, so the normal alternate rise and fall of each hip is easily accommodated (unlike the rigid hip suspension of several other hip-waist band carry packs which were improperly copied from the original Jack Pack).

2. Full coverage nylon net shoulder unit, uniformly distributes forward balancing load across shoulders and upper chest. Vertical loads may be carried on shoulders without being pinched by the pack. The shoulder system is similar to a cut away vest, made of heavy nylon net. It wraps completely over the shoulder and back down to the base of the pack frame, with independent buckles for each strap on each side. The forward balancing load is taken by continuous lacing from tape loops along shoulder center-line back to the pack. This makes the load self equalizing across the whole shoulder. To prevent the wide net front from pulling under your arms, a single center strap is provided, with a quick release buckle, to pull both sides to the center just below your collar bone.

3. Ultra lightweight high strength frame, using same alloy tubing so successfully used on our tent poles, With epoxy bonded aluminum fittings having joint strength greater than the basic tubing.

4. Pack design having maximum usable volume within width, depth and height limit similar to other packs. Six compartments with zipper access from back and sides allows you to carry sleeping bag on top and still have complete access to pack. This avoids the awkward bottom bulge of bottom carried sleeping bags, and protects your bag from dirt, water, and wear. Despite the silly inaccurate arguments on balance put forward by many others to justify carrying sleeping bag on the bottom, the only true reason was to allow access to top opening pack. Our pack, has no such restriction.

5. Pack fabric is waterproof, reflective aluminized. This reflects the sun and keeps your pack much cooler, thus preventing damage to heat sensitive items like film, cheese, butter. The waterproof coating protects against rain, and by minimizing absorption and transmittal of food odors, reduces chances for rodent and bug invasion into your pack.

The frame is made from 5/8" dia X .025" wall, 7001T6 tubing, which has a yield strength of 101,000 psi. Joints are made of .79" dia X .065" wall 6061T6 tubing parts machined, dip brazed, and heat treated to 43,000 psi. Frame tubes are permanently bonded into the joints with epoxy, injected into the joints under pressure. Compare this to the typical 7/8" X .035" wall 6061T6 tubing used in other pack frames, with welded joints that reduce strength at the joint to about 20,000 psi (or worst, with sim screwed on mechanical joints that slip fail). Thus you can see the GOLITE p frame is much STRONGER, LIGHTER weight, more FLEXIBLE, so it can take even hig shock loading.

The top frame extension gives stabiliz support to a sleeping bag strapped on (straps provided), even when sack is not f (unlike internal frame, or rucksacks wh rely on a full, tightly packed sack to any stiffness & load control). But, if some reason you don't want the extension, can be left off, or made removable (altho won't be quite as strong).

The bottom extensions allow the pack stand by itself, and also support a t strapped on the bottom (straps a provided). These can also be left off if really don't want any extensions, and w have no effect on strength. Note tho t the lower extensions are totally shielded your hips (and by the tent if one carried), so are never a bother in brush climbing.

A slip joint can be put in the middle the pack to allow it to be folded in half it will fit inside a suitcase. This weak it slightly, but does allow you to carry in standard luggage when you may want to some backpacking on a vacation or busin trip.

SIZING:

The pack and frame are normally availa in small, medium and large sizes. If you too small or too big for those sizes we w also make special frame size to fit, adapt the closest size sack to it. need12695

FRONT VEST: Measure from top of shoul down surface of chest nipple on breast. use HALF that distance for inside edge front of vest. This keeps the cross st well below collar bone, yet high enough the side straps will not bother breasts.

If your build is not suited to this ca system, yet you still want the advantages the GOLITE frame and sack, we probably adapt it to any other hipbelt, shoulder st combination. Write to us with dedails your problem and we will try to w something out. We have managed to adapt many different problems witn hips, bacl shoulders.

FRONT VEST: Measure from top of shoul down surface of chest to nipple on breas We use HALF that distance for inside edge front of vest. This keeps the cross st well below collar bone, yet high enough the side straps will not bother breasts.

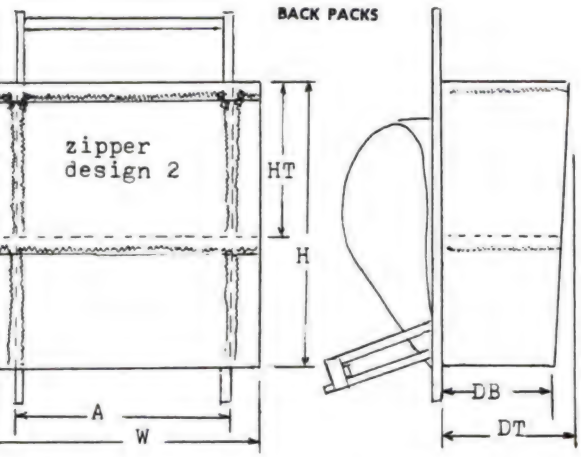
If your build is not suited to this carry stem, yet you still want the advantages of e GOLITE frame and sack, we probably can apt it to any other hipbelt, shoulder strap mbination. Write to us with dedails of ur problem and we will try to work mething out. We have managed to adapt to ny different problems witn hips, back & oulders.

Golite pack sacks are available in two zipper arrangements. The 1st design, wn in pictures and drawing, has center compartment zippers in a T shape. tical zips on side pockets are on front which gives access to lower pockets le pack is worn. A holdout bar at top keeps it expanded. The 2nd design is ctly same size but has inverted U access to center compartment which gives opening. Vertical zips on side pockets are also on back side for easier access ll compartments when pack is laid flat. Bottoms of the 3 upper sections zip n to form compartments the full height of pack. Stiff but flexible closed cell m sheets between middle and side pockets serve as holdouts, and bar is minated. (These foam sheets can be easily pulled out to use as sitting pads on k or snow). The extra zippers and fabric for foam compartments make the 2nd gn a bit heavier than 1st design. COLORS: Aluminum and a few red and e available in 1st design, and alum, red, blue, white, black, brown and a few en available in 2nd design. The 1.9 oz. aluminized fabric has held up very l, convincing us there is no need for heavy 7 oz. sacks. We will continue the to 5 oz. fabrics to give a variety of colors.

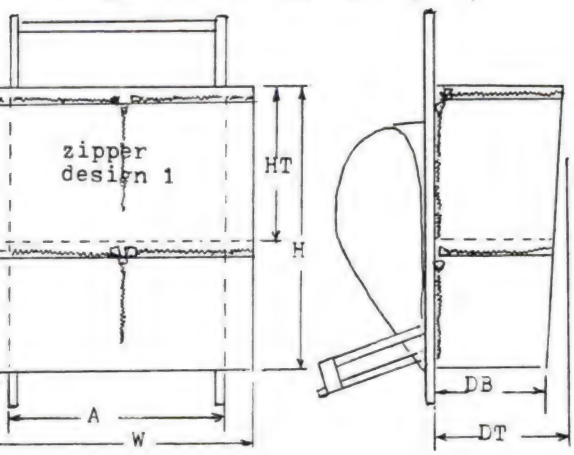
Others use heavy fabrics "because it's always been done" (Kelty & ntrails) or because their seams have come apart (which is due to lack of hot ing or use of cotton or polyester thread. Very heavy Nylon fabric is needed rameless packs which don't have protection of a frame, especially if used for k climbing.

All our frames are now the heavy duty tubing which has performed perfectly.

These packs have an extraordinary record for fort and durability, and still provide the maximum carrying acity for given overall size.



	H	HT	W	A	DB	DT
Small	18	10	18	14	9	7
Medium	20	11	19	15	9	7
Large	22	12	20	16	9	7



BACK PACK CAMERA CASE

How often have you wanted to take a picture, but passed it up because your camera was inconviently packed in your back pack? Wouldn't it be nice to have camera and accessories right up front where you could use it instantly? The new Stephenson Camera Case (SCC) does just that and much more.

The SCC is a simple 10" x 4" x 5" top opening case of heavy waterproof nylon construction. It is stiffened with closed cell ethafoam which holds the shape, provides padding, shock absorption, and floatation for your equipment. The top closes with a 2-way rugged coil zipper. The interior is divided with nylon walls into three spaces, with center space shaped to hold any 35 mm or 126 instamatic, some 6 x 6 cm, and some 8 mm or super 8 movie cameras. Side compartments can hold spare lenses, lightmeter, filters, film, or trail snacks.

The case is supported by a telescoping aluminum tube frame which plugs into the hip band arm ends of the Stephenson Go-Lite Pack. The weight of the SCC and its contents counterbalances part of your pack weight, thus reducing pull back loads on shoulders. The telescoping frame allows the pack arms to work normally for automatic hip clamping, or, can be pinned as desired to increase or decrease clamping force on hips. The SCC frame is held on the Go-Lite Pack arms with a simple pin, through arm end fitting. It is removed by simply pulling the pins and pulling camera case and frame forward slightly. Normally the bottom of camera case will carry about level with bottom of the Go-Lite Pack arms, thus providing lots of leg clearance for climbing on steep trails or over boulders. (Naturally, for any difficult climbing, where you may have to belly right up to the rock, or raise knees to your chest, the SCC should be slipped off and tied on to the back of the pack with its attached shoulder or hand carrying strap.)

For day hikes without your pack, simply remove the frame and carry the SCC with the attached, adjustable hand or shoulder carry strap. (When used with the frame and pack, this strap will loop around the SCC frame to prevent accidental pull out of the frame.

We will be producing the SCC in a variety of colors, such as green, blue, brown, red, maroon, and black, in one size only, which will fit all Go-Lite Pack sizes. For production efficiency we will produce a lot of cases about once a year, same as we do back pack sacks. Thus, we will not always have all colors available. Give several color choices when ordering.

The top opens as it does to let you see into the case better, since your eyes are out beyond middle of the SCC when looking into it. Also you can not operate zippers if it opened from other side.

STEPHENSON CAMERA CASE

HISTORY OF GOLITE PACK DEVELOPMENT

In 1955 we started overnight backpacking with an old rucksack we had used for many seasons of day hikes in New Hampshire and Vermont. It was fine for the light load of lunch and extra clothes for a day hike, but was miserable with 30 to 40 lbs. needed for overnight or week long backpacking trips. We tried several frame packs, with the most significant improvement being found in the beautifully constructed Kelty pack, with its belly strap for shifting load to the hips. But, while this saved the shoulders, it resulted in sore front hips, uncomfortable pressure across the belly, and backache due to concentrated load in the small of back. The broadest area of the hip tops, at side and back, were completely skipped by that system. We thus started work on a system to put the load on the broad side and back hip area while avoiding loads on back bone, front edges of hips, and belly. The most comfortable design was a rigid moulded fiberglass honeycomb core hip band which was shaped, fitted, and cured directly on the user. This gave a perfect fit for that person, putting the load precisely where wanted, distributed over such a large area that it was hardly noticeable. The major drawback of that was the problem of individually fitting and curing the hip band on the user. Also, the pack could not be used by others unless they just happened to have the same size hips. Examination of several such moulded bands, and various hips, indicated the contact areas were basically two partial tilted circles, which could be matched very closely with padded fabric bands on each side, suspended from a point slightly behind the small of the back and two points just forward of hips and tangent to forward side of hip. A freely hinged side arm, extending from the frame forward of hips provided the forward support and automatically adapted to various hip size and carry locations. This system was put on the "Jack Pack", an aluminum box pack, which we sold from 1957 to 1961.

One problem I repeatedly had in the Sierras was various small rodents chewing into my pack to steal food, even when the pack was hung from a tree with thin cord. The solution to this problem was to make the pack out of sheet aluminum. An aluminum box, with several small inside shelves, and doors in the back, built with approximately same dimensions and volume as a medium Kelty pack, served both as frame and container. This was referred to simply as Jack's pack, later shortened to "Jack Pack". In use it was found to provide many advantages over the fabric packs: 1. Rodents couldn't steal food; 2. Being rigid, it was far easier to pack; 3. Access thru back made it easier to find things; 4. It stayed cold inside due to reflection of sun; 5. It would stand by itself, forming an excellent camp cupboard and stove wind screen; 6. It protected contents from impact damage; 7. Far more durable and wear resistant. It had two major disadvantages though: 1. It was difficult and expensive to make, and 2. Many people would not accept it as a back pack because it did not match their concept of what a backpack looked like!

By 1961 we'd gotten involved in many other activities, so dropped the time consuming pack production, and attempted to get Kelty and A-16 to put the hip carry system on their packs. Kelty didn't believe he could raise prices enough to cover the increased costs, although he liked the greater comfort.

A-16 did adapt to a hip carry system, but not quite the one we had such good success with and showed to them. Their system, using rigid suspension points directly over the hips, tends to place the load too far forward (which acts to tilt hips forward and pull back more on shoulders), and will bump the hips if there is any rise and fall of hips while walking. Hikers with very rigid hips will have no trouble with that system, but flexible hips, as many fellows and most girls have, will end up with sore spots and bruises directly under hip band attach points. At least four other copies of the A-16 form of hip carry are now being produced. Three of them Sunbird, Alpenlite, and Universal, were designed by ex-employees of A-16, who found the breakup of A-16 company due to some financial problems gave them an opportunity to go out on their own and incorporate design improvements they could not do at A-16. The Sunbird offered much greater strength and easy adjustability, plus a belt suspension which reduced hip bruises, but at a cost of much higher weight and price. The Alpenlite utilizes a much more efficient structural design, far lighter weight and greater strength, but lacks Sunbird's adjustability. Jan Sport recognized the problem of misplaced load point, so put more adjustment points on their copy of the A-16. But, their grotesquely distorted frame, technically false advertising, and obviously improper advertising implying they are the first and only ones producing a wrap around hip carry which works, would lead one to suspect they really don't know what they're doing, and cannot be trusted. Copying is the sincerest form of compliment, but to claim their copy is original, or first, is most ridiculous.

By 1970 business growth forced me to make this a full time business, and leave aerospace engineering. The growing number of complaints about other's wrap around hip carry packs, resulting mostly from the wrong people trying to use the available ones, convinced me it was time to produce another pack with the true hip carry system, used on the Jack Pack. Experiene with the ultra high strength 7001 aluminum for our tent poles showed we could make stronger and lighter weight frames than commonly made from the much weaker 6061T6 or magnesium. Also, years of experience with sleeping bag stuff sacks, which are carried on the bottom of most packs where they get more abrasion than the pack sack, showed that most packs are made of fabric more than twice the weight needed. Newly developed aluminized coatings could provide sun reflection similar to the aluminum box Jack Pack, while use of three way zippers could give similar back access, thus allo full access to contents, while the bulkier sleeping bag was on top. Go-Lite pack was thus developed and put into production. Since people want absolute minimum weight for back packing, while o want maximum ruggedness to withstand the rigors of hitch hike train-airplane touring or bushwacking, we decided to produce frame in two weights, and the sack in three weights. The heavy w frame and sack will exceed the strength and wear resistance of other packs. The light weight frame and sack is about half the w of other packs, similar in strength to most light frames available, more than adequate for all normal backpacking with loads up to 4((Loads of 65 lbs. have been regularily carried with the light frame, our standard demonstration consists of loading it with 150 lbs., bu still recommend the heavy duty frame for loads over 40 lbs. Only lightweight sack is available with aluminized surface, since this ture is most desirable for high altitude back packing where sun ex ure is greatest and lightweight is most important. The 5 oz. and oz. sacks are made in various colors, to suit your wishes. The fastens to frame with 8 large snaps, so it is practical to have bo lightweight and heavy duty sack for different uses, and rapidly i change them. For airline travel, where pack frames are likely to damaged if checked, the sack is quickly snapped off and checked, w frame is carried aboard. (This was done on our trip to Japan, t vestigate zipper production and new designs. Our luggage consiste Go-Lite packs, and was far easier to carry about than normal suitc frames were snapped off, folded flat, and carried aboard.) Despite little advertising, many packs were sold during 1972 and 1973, used all over the world. We had some early problems with adh bonding of bright dipped anodized parts. (In fact, it was found in a pack which had been in regular use during many conditio trips, then used for a McKinley climb, carrying loads of 70 lbs., a the joints could be easily pulled apart by hand! The sack and ha held it together). This adhesive problem was easily solved.

Padded shoulder straps are used on most packs to provide the u forward balancing support, and to take some of the vertical load w desired. These straps never seem wide enough to spread the load fortably over one's shoulder, yet always seem too wide where they under one's arm. Girls especially find their light shoulders, with little muscular padding, get sore from strap pressure, while the straps will press and rub the sides of breasts. Ideally then, one w want a wide, flexible pad over the shoulders, which narrows dow a thin strap under the arm. This we accomplished by using a soft n mesh vest fastened to ½" side straps which form a catenary curve fasten in the center just below the collar bone. The vest extends the shoulders and partly down back, where it is fastened to a cate curved rear strap, which buckles on each side. Taking up on rear straps will shift any desired amount of lifting load directl tops of shoulders. Cord lacing, to nylon web loops, sewn to ves shoulder top, transfers the pack balancing load from pack to while allowing the vest to follow the exact shape of your shoulder.

The net vest unit has worked beautifully, although we have some problems with mail order customers who either gave us inco sizing information, or would not follow proper adjustment proceed New sizing instructions in brochure, and improved fitting instruc seem to be reducing that problem to a minimum. We can build with enough adjustments to allow a perfect fit, but the customer make use of the adjustment features to achieve that perfect fit.

The sack is divided into two main center compartments and smaller side compartments. Three way zippers open center com ments, while the side pockets are opened with one zipper across the and one down one side. The overall dimensions are similar to other packs, but, by enclosing the full volume available within dimensions and using internal dividing panels, the useful carrying ume is much greater than any other packs. Many customers request maximum possible volume. This we provide, although we note most people report going out with ½ to ⅔ full packs!

WIND CHILL FACTORS

Don't get misled by all the false information being repeated a wind chill factors. The most important thing about published wind factors that others repeatedly fail to mention, is that they apply *on bare skin* exposed *directly* to the wind. The air temperature does change when the wind blows, but the *insulating* effect of the su boundary layer of air is drastically affected by wind velocity. When boundary layer is your only insulation, as it is with bare skin, then change in it is a direct change in your *total* insulation. One wa *express* the change in cooling rate, of bare skin, as wind velocity it increase, is to state the air temperature that would be required t the *same* cooling *rate* in *still* air. The surface boundary layer insula in air, is generally equivalent to about 1/16" of insulation. Thu you were wearing clothing 15/16" thick, the *effective* insulation in air would be 1" thick, while in a high wind it would approach 15/ Thus the same wind which takes away nearly *all* of your insulatio *bare skin,* can only remove 1/16 of your insulation when you hav of clothing, or, with 2" of clothing, 1/32 of your insulation coul lost. In a 5" thick sleeping bag, all the wind could do is take a 1/80 of your insulation! This of course, relates only to how it af surface boundary layer insulation, which is all that is referred t

nd chill factor charts. If your outer clothes are not wind tight, or you ve openings for wind to get inside or under your clothing, then a greater amount of insulation could be lost, but *never* as much as ne people have believed from wind chill factors. If you wish to avoid ere frostbite, it is essential that you understand the above! The ole reason why the military derived, and published wind chill charts *because* of the *vastly different* effects wind has on bare skin com- red to a clothed person. When you are fully clothed, with thick tts on, you will not feel any effects of very high wind. From experi- ce you may know you can work for a given length of time, at that en temperature, with bare hands. Since the wind has had no ticeable effect on you when fully clothed, you are then tempted to nove your mitts to do a particular job bare handed, but *watch out* — the wind is high you could severely freeze your hands before you're en aware of it. So remember, wind chill applies to bare skin — the gher the wind, the greater the apparent temperature difference there ll be between clothed and unclothed. The amount of insulation you ed does not change significantly with wind strength (altho, to assure insulation you have will work, the outer surface, and all openings st be wind tight.) — Personally, I think the manufacturers who have entionally tried to delude their customers into buying thicker cloth- and sleeping bags by falsely presenting wind chill charts, are ssly dishonest. Since they are also mostly the same ones who have ed on that grossly inaccurate army quartermaster corps chart of ulation thickness needed versus temperature, at least their equally honest presentation of wind chill charts will tend to counteract that of misleading advertising. But, in so doing, they have negated the ole reason for determining and presenting wind chill charts, and are ly to induce people into doing the very thing the charts were de- ned to prevent. It is possible that those who have so grossly misused wind chill charts are actually so ignorant, that they don't realize at they've done. I do not believe that, but, if that really is the case, uld you be willing to believe anything they said about their prod- , or your needs, if they are that ignorant?

STOVES: We do not make stoves, but feel there is so much information put out about them in catalogs, magazine articles, and edo-research articles to support introduction of a new one, that the olic should be made aware of a few very important, regularly over- ed things. 1. The most common way of comparing stoves is to rate m on how fast they can boil a quart of water, and how long they operate on one tankful of fuel. While both of these factors have e slight significance, they are hardly the real basis for selecting a ve, and the data so presented is generally misleading anyway, since one of each type stove is tested. If all you're going to do is boil er, then the hotter the stove the better, since a quick boil can rease the heat lost, and can save you time. But, much cooking sists of a quick heat up then a long simmer. If you can't turn your e down to a very low heat, you'll waste fuel and burn your food, end up spending far more time cleaning your pot than you'd ever e from a fast boil (Then *you'll* do the fast boil!). Thus, the *most* ortant operating characteristic is how *low* a stable flame can be ntained, not how hot it is.

Generally, following directions is a good idea. But, following direc- s for starting gasoline stoves could be very hazardous, *so don't!* tead, bring along some solid fuel pellets, or fuel paste. These are dely sold for cooking by themselves, but are rather inefficient that y. Instead of pouring lethal, explosive gasoline in the priming cup, then getting a big flare which barely heats the gas generator, ply place a small bit of fuel pellet in the priming cup, light it, and tch it put it's small, concentrated heat directly on the gas generator. spilling, no mess, no explosions, no flare ups, no singed eye brows, carbon covered pots, no repeated starts and failures — just a simple, ck, clean, guaranteed start. Please pass these instructions on to all know who use gasoline or kerosene stoves.

As for fuel capacity and burning time: The only real significance t has is avoiding refueling in the middle of cooking a meal. If k size is adequate for one meal (and all the stoves I know of are), n there is no advantage in a larger tank, unless it is big enough for omplete meals. Since the tank on a stove must be stronger, and refore heavier, than a separate fuel container, due to high pressure, optimum stove and fuel system, weight wise, would hold just ugh in the stove tank for one full meal.

CONVERTA PANTS

We are finally producing JACK'S all purpose convertable pants for mountaineering, canoeing, bicycling, or any other activity. Jack has used his first pair on all his outings for the last 8 years & they're still like new, yet now we can offer them in an even tougher & far more comfortable fabric.

UNIQUE FEATURES

1. INSTANTLY CONVERT FROM LONGS TO SHORTS, without removing any parts, while you hike. OR vent legs while shading them & getting bug protection.
2. Amazing ARAMID fabric, tougher than Nylon, quick drying, very windtight, virtually fireproof, yet with a soft finish like the finest wool suiting fabric but, nonallergenic.
3. Fly zipper goes all way thru crotch & up backside so men or ladies can relieve themselves in the woods without lowering pants and inviting mosquitoes for a feast.
4. Velcro closed self belt eliminates need for separate belt, which might be uncomfortable under a pack hipband. Regular beltloops included.
5. Velcro closed cuff for dust and wind blockage. This is the same type closure we started many years ago on jackets and shirts, and has become standard on top quality jackets.

All CONVERTA PANTS are individually custom made to order. Please give your standard pants size, and any comments on special sizing or fullness. Color choices are medium Blue, Tan, dark Loden Green or dark Olive Green. Allow AT LEAST 6 weeks for delivery. For the do it yourselfer we will sell fabric for $18/yd. about 46" wide, and zippers for 3 cents/inch. (1980 prices)

Customer Comments

You seem so happy in your advertising brochure. Second my Triple sleeping bag is just fantastic!!! I was warm all the time even at -40°F with only a tent between me and the out-of-doors. The warmth and and the light weight were beyond all expectations!!

P.S - Your tent has been a pride and joy - think even fight off a mama with kids to keep it fro being damaged —

There is a real Stephenson! although your far-flung reputation as the Wizard of Backpacking made us a bit timid about imposing on you, we left your home as much reassured by your kindness as we were dazzled by your knowledge

THE TENT IS THE FINEST IVE OWNED BAR NONE. I'm VERY HAPPY WITH IT,

THE 5 POUND BOAT HAS BEEN A JEWEL. ONCE, IN SOUTHEAST ALASKA, HAVING THE BOAT IN MY PACK SAVED US FROM BEING STRANDED AND PREVENTED THE POSSIBLE LOSS OF A FRIENDS FISHING BOAT.

I finally had a chance to test out my triple; it was -2 and I only used the thick nites - with no tent or other protection. FANTASTIC.

Someday the rest of the world may start finding out what's happening

My sleeping bag has traveled ab 20,000 miles since I received it in th I'm everything from desert conditions the Grand Canyon to new mountain climbing conditions in Rocky Mountain Pk. (11,500 ft.) to severe winter in Utah (in March) at about 10° below I've rocks, sand or wet ground and o 7 ft. snow. I've the rain and in dry weat It has yet to fail to give me a good night's sleep. It has been my greatest comfort in journey. It has been my only bed since mid-April and I've not really longed for any (unlike many I've met).

I feel my Warmlite bag has

My wife and I bought 2 of your ponchos last spring. We used them much in Greece (raining) and Israel (not raining but sunning) I have to tell you, they are outasite! Actual reading under makeshift shelters made from ponchos on Negev desert in Israel was 83°F. The air temp. was 109° in the surrounding area.

contributed much to the ~~the~~ comfort if not the success of my trip.

I've talked with a lot of people who felt $50 was an outrageous price to pay for a sleeping bag but they somehow never look very rested in the morning.

Once again, my most sincere, heartfelt thanks for producing the best damn sleeping bag in the world!

Nov 12, 1973

Dear Friends,

Its been 2½ years now since I bought my Warmlite sleeping Triple bag from you for my summer on Mt Logan (19,850') in the Yukon of Canada. We had terrible weather that summer where it often averaged -20°F and where -40°F was a common experience and 0°F was really warm. In that land of endless cold, a good sleeping bag was really a life-saver and I used to be kidded a lot because I often would say in my sleep, "my bag is really warm!" - I guess the contrast between cold and warm was one of the sharpest distinctions I had ever known After Logan I didn't have to retire my bag like the others up there because it works well in warm weather too - and those heavy expedition bags are only good if its really cold. In the years since, my bag's been everywhere in all kinds of weather and I have become slowly very sold on your unique design - its nice to see someone's thinking these days

My wife and I are both very happy with our Warmlite triple bags, after using them from late winter to hottest summer. The built-in pad is an excellent concept — it makes the bag sleep like the bed back home on the first nite out. I no longer toss the first nite or two till I get my sleeping habits straightened out.

As I often seem to be in the wrong place at the right time; getting blasted by the weather, your tent has kept me dry, and your bag warm. The tent has easily withstood winds and gusts I'm afraid to estimate. I've slept in the triple to about 10 below with the top open. It is really warm and dry. I don't think I could find a better tent and bag anywhere. Wh really a relief is there's none of the insane flapping like that of ot tents.

" yesterday we emerged from the most
ed route I've ever seen, in a blinding
storm after 12 days of mostly rain. I
been very impressed with my pack. The
gn is spectacular, extremely effecient, &
COMFORTABLE. It is the best pack I've
seen."

"The Stephenson Camera Case amazed me! I
my camera body, 35,50,100, & 200mm lens,
tension tubes, flash & 3 rolls of film in
e & there was still room for more! The
itself feels great & is many more times
ortable than my old 'conventional' pack."

" just returned from 6 weeks in BC &
n territory Your tent, sleeping bag &
were great!"

" after 2 week trip I really like the
, particularly for nude hiking as the
log shows. I had a chance to test it's
ht limit as a geologist I had to carry
t 75# of rock out"

"The pack is roomy & incredibly
ortable. I find the No Sweat shirt to be
only thing I need for cross country
ng."

"The Camera Case (SCC) is the NEATEST
in the backpacking industry. Gold Star
you Jack."

" you are a warm & hospitable family in
truest sense, & we felt welcome from the
t moment we arrived. I admit the Japanese
Tub experience was my first, but not the
, I hope."

" have used your bag with great success
200"+ rainfall in coastal Alaska,
ii, and -35 deg ski touring in Brooks
e"

"Jack, your mosquito net bag top is super. In Africa it's perfect (always LOTS of mosquitos)"

" I've heard rumors to the effect you've improved on your sleeping bags in wonderful ways. Frankly I can hardly believe such a thing possible. In 4 years of use I've never had anything but a good nights sleep in them."

"anyway, what I'm getting at is I FULLY agree with your design approaches. Just elementary physics & some common sense show you are 'on target'. It's just more enjoyable to go to the mountains with gear that weighs far less & performs much better. Too many times in the past too much weight on my back has ruined the fun of it all"

"we got your tent in Kenya last year and have been extremely happy with it in all conditions, from windy Simien Mts in Ethiopia to humid tropics of the Congo"

"Love the shirt - X countried 7 mi. Sun. in the no-sweat: wine froze, we didn't. How about a Stephenson NS wine boata next"

" have used your tent for 6 years extensively thru the Canadian Rockies (in field work for THE CANADIAN ROCKIES TRAIL GUIDE). Twice I pitched it in passes on the crest of the Great Divide. Both times we were hit by incredible storms (friends down in Banff said they were the worst in memory). Both times I cleverly pitched our tent broadside to the wind. Yet both times the tent held fast. Some deformation, but nothing to disturb a good night's rest. So. we are quite happy with your product. But, I'm never going to pitch it so exposed again. I'm certain there is something about Stephenson tents that inspires the Lord to conduct a little market testing!"

" have seen several of your tents in the Sierras and their owners, without exception, were fiercely proud of them. We want to be proud too"

"I'm the proud owner of one of your single wall tents. It has served me well for 5 years, 2 as a seasonal Backcountry Ranger, so recieved considerable use & been thru some real 'blows' & never let me down!"

"Many thanks for the hospitality you gave Greyson & me last Sunday. I wish more people did business in such a relaxed & pleasantly open way that you do. Perhaps if they had products they believed in they could."

TESTAMONIALS: These excerpts are from less than 1% of the similar letters we have in our files, any of which can be read here. We will send copies, for $1/page, of any you wish, but with names removed (we will not invade the privacy of our customers).

New portions of this catalog were composed and typed using an OSI C3 micro computer, our home brew editor-printer program, & Selecterm printer. We'd love to hear from anyone using OSI computers to exchange info & programs. This little $3k wonder keeps our inventory & orders files, mailing list, payroll, & this sort of thing.

LARGE PHOTO PRINTS AVAILABLE

You may note the center fold, and several other pictures were taken by Myron Rosenberg. We've made internegs of those, and have large poster size 14X20, 20X30 prints available. Price in 1980 is $16 for 14X20 & $24 for 20X30 prints. We can also supply 30X40 prints for $60, and prints of any pictures in this or our former catalogs, but expect a long wait to get them. For a set of 3X5 prints of Myrons photos send us $3.50 (part can apply to large print)

STEPHENSON NATURAL WINE LABEL

JACK and JOAN STEPHENSON

Zip	Zone	Zip	Zone				
010-043	2	249	4	457	4	730-739	7
044	3	250-253	5	458-479	5	740-746	6
045	2	254	4	480-487	4	747-748	7
046-047	3	255-259	5	488-499	5	749	6
048-067	2	260-268	4	500-516	6	750-754	7
068-089	3	270-277	5	517-521	5	755	6
100-119	3	278-279	4	522-525	6	756-784	7
120-126	2	280-299	5	526-539	5	785	8
127	3	300-315	5	540	6	786-796	7
128-129	2	316-355	6	541-549	5	797-799	8
130-139	3	356-359	5	550-574	6	800-810	7
140-143	4	360-361	6	575-577	7	811-816	8
144-146	3	362	5	578-584	6	820	7
147	4	363-369	6	585-593	7	821-825	8
148-149	3	370-379	5	594-599	8	826-828	7
150-168	4	380-381	6	600-622	5	829-880	8
169	3	382	5	623	6	881	7
170-174	4	383	6	624-633	5	882-883	8
175-198	3	384-385	5	634-675	6	884	7
199-218	4	386-397	6	676-679	7	885-999	8
219	3	400-432	5	680-689	6	Canada	8
220-241	4	433	4	690-699	7	Mexico	8
242-243	5	434-436	5	700-704	6		
244-245	4	437-449	4	705-706	7		
246-248	5	450-456	5	707-729	6		

1980 PRICES. After 1980 add 15%/year or see new list

TRIPLE BAGS all full loft with highest quality 750 Down

GIRTH	52	56	60	64	70	over 70
foam bottom	$276	$322	$345	$368	$396	$5.75/in.
DAM bottom	$333	$385	$408	$431	$460	$6.85/in.

Includes foam or Down AirMat, pump and sack
SSSS, Stephenson Super Silver Sleeper, $750

Extra large Bag sack with bag order, $5

OPTIONS:
1. Net top for tropical use $35
2. Cotton bottom liner for tropic use $20
3. Waterproof single sheet top cover $20
4. Waterproof bottom cover, zip on $23
5. DAM purchased SEPARATELY without a bag, $75
6. Extra thick top, cost is 50% of foam bottom bag price.

WARMLITE TENTS:

2R & 2X	$265	3R & 3X	$335	5R	$430
2ERV	$380	3ERV	$495	5X	$415

OPTIONS: S = SIDE WINDOWS $25/tent (pair)
D = Drop ends: 2R, 3R, 2X, 3X $20 5R $26
D on tent with end liners, $35 for 2 & 3, $44 for 5
E = End liners; 2R $24 3R $30 5R $48
A = Alum top (or ANY color mix) $25 extra, except on ERV
M = Middle pole, $39 for 3R, $58 for 5R, included with 3ERV
Fabric patch scraps free. Always specify tent color, size, and date purchased when ordering

Repair service: $15/hr for repair work.
Rewaterproof tent top and floor $40. Send CLEAN tent only.
Replacement POLE parts: SECTION $3.80 JOINT $.80
Replacement sack, Bag $6.50 Tent $4

NO SWEAT (VB) shirts SM $26, MED $27, LG $28, XLG $29

PONCHO $28 Vapor barrier plastic gloves or socks $.15/pair

CONVERTA PANTS, Tan, Dark Green, Blue. $60. Give pants size.

GOLIGHT PACKS
SMALL $115 MEDIUM $120 LARGE $125

SCC Camera case $22

STOVES and SAFETY STARTERS
ESBIT solid fuel starter $1.80/package. OPTIMUS primer paste
ESBIT MINI STOVE and solid fuel bars, $5
SVEA 123 $28 16oz. lightest, widest heat range
#124 6 piece cook kit & windscreen $18 12 oz.
OPTIMUS 88 $40 (combination of SVEA 123 bare + 124 cook kit)
OPTIMUS 111 $58 Hottest, widest heat range, Kerosene

Fabric, all prices per square yard. No return on cut yardage.

Fabric widths vary from 37 to 54", but, unless stated otherwise, the prices are based on 45" width..

Fabrics: Porous 1.2 oz. sleeping bag, red, blue, green..... $3.80
Coated tent outer, 1.6 to 1.9 oz. green, yellow, light blue dark blue, or brown.....
Coated, vapor barrier for bag or clothing interior, dark blue, yellow, light blue or white..... $4.50/yd
Same, but with durable aluminized finish.....
We do not stock poncho fabric or back pack fabric.
Mosquitoe netting, nylon $1.60
#5 coil zipper normally available in 25", 40" (closed end) 76", 90", sometimes 115", per inch..... .04
#5 delrin tooth zipper, 40" closed end..... $1.25
34" two-way jacket zip, separating..... $2.00
Urethane sealant, 4 oz..... $4.00
8 oz. $6.50

UPS Shipping & Insurance: (Post office air) [POST OFF. SURFACE]

Items 1980	UPS air	Zone 1-3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8
Poncho		1.10	1.12	1.23	1.33	1.43	1.55
Shirt	1.75	(2.71)	(2.81)	(2.90)	(3.00)	(3.09)	(3.25)
		[2.39	2.56	2.72	2.84	2.98	3.20
2R tent	5.60	1.91	2.06	2.23	2.50	2.75	3.05
		(5.00)	(5.25	(5.50	(5.70)	(6.00	(6.50)
		[3.90	4.20	4.30	4.50	4.75	5.25
3R tent	6.50	2.00	2.50	2.64	3.00	3.25	3.66
		(5.72)	(6.10)	(6.50)	(6.85)	(7.30)	(7.80
		[4.77	5.00	5.20	5.50	5.77	6.40
5R tent Bags	8.30	2.72	3.00	3.25	3.70	4.00	4.50
		(6.50)	(7.00)	(7.60)	(8.30)	(9.00)	(9.80)
		[5.00	5.20	5.60	6.00	6.60	7.50

AFTER 1980 CHECK WITH U.P.S OR P.O., OR ADD 20%

NOTE: UPS shipping includes insurance for full value. Claim service in case of loss takes 1 to 2 weeks.

Post office shipping includes insurance up to $400. You assume all responsibility for any greater loss. Claim service takes about 6 months, if you're lucky.

INDEX OF SUBJECTS

STEPHENSON RFD 4 Box 145
GILFORD N.H. 03246
603-293-8526

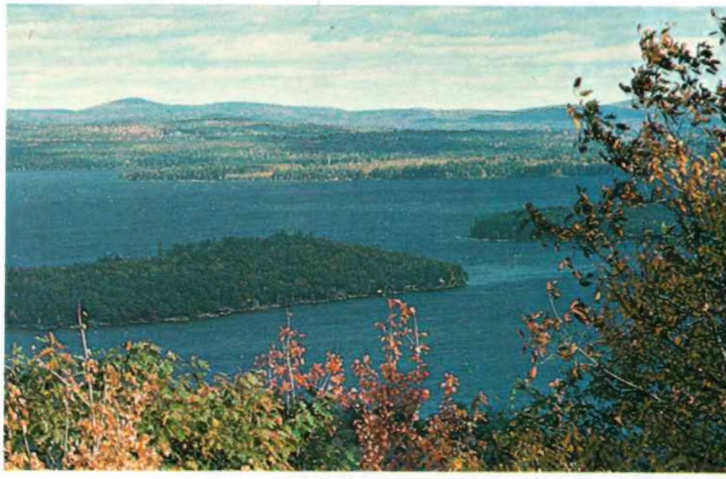
OUR ISLAND CAMP

JOAN and First Rose

HOT TUB in a boat. Jack, Joan & friends

HOME AND SHOP

STEPHENSON POND



VIEW FROM LIVING ROOM